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**The
1787
"New York"
Immunis Columbia
A
Mystery
Re-Ravelled**

by

Michael Hodder

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The 1787 "New York" Immunis Columbia A Mystery Re-Ravelled

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1787 IMMUNIS COLUMBIA – Small Flan variety. Enlarged 2x
Photo: Bowers and Merena, ex Norweb:2680

ABSTRACT

Comparative die state studies and the evidence of undotypes dated 1788 in the New Jersey series requires a revision of the traditional dating of the 1787 Immunis Columbia coppers.

This new study indicates that the issue was struck circa late 1788-middle 1789 under the auspices of Matthias Ogden in the original Rahway mint, where New Jersey 16-S and 26-S had also been coined. It is probable that the entire issue was planned for circulation, and was not struck to support Matthias Ogden's March 3, 1787 coinage proposal, but rather, to provide Ogden with another source of revenue free from the 10% seigniorage payable to the state on the New Jersey coinage.

That the coins adhere to the statutory New Jersey weight standard of 150 grains further suggests that Matthias Ogden was their author; Ogden appears to have been an upright individual who honored his commitments. They do not appear to have been a surreptitious issue.

The identification of James F. Atlee as the die cutter for the Immunis issue is re-examined and challenged, suggesting a reappraisal of his role in all other copper issues that have traditionally been ascribed to his hand.

Introduction and Review of the Literature

There are few early American copper issues more mysterious than the 1787 *Immunis Columbia*. Apart from its very existence, and its types, apparently little else of a contemporary nature has survived to tell us anything about this issue. There are no known letters or newspaper accounts that mention it, and no records regarding its manufacture have come down to us. Why it was struck, by whom, where, and in what quantities, are all questions that cannot be answered by contemporaneous sources. The numismatic historian must do his best, in the absence of such records, to offer plausible solutions to these problems.¹

The earliest auction reference I have found to the 1787 *Immunis Columbia* may be read in Edward Cogan's sale of the Bogart Collection (February 28, 1859), lot 1270.² In the same year, John H. Hickox described the issue as "A pattern supposed to have been struck by Col. Reed of Uxbridge."³ If Montrovile W. Dickeson had read Hickox's description of the 1787 *Immunis Columbia* he apparently did not accept the attribution to Reed, for the year following the publication of Hickox's book Dickeson wrote "All we know of the 'Immunis Columbia' is, that it had an existence, and perhaps as important a one, in relation to the events of its day, as any of its copper competitors." Dickeson listed it among issues of New York.⁴ W.C. Prime accepted Dickeson's attribution, writing "The *Immunis Columbia* [1787] token is ranked as a New York coin."⁵ An entirely new attribution was introduced in Alexandre Vattemare's 1861 catalogue, where it was called "a pattern for the Confederation".⁶ Sylvester S. Crosby first believed it to have been struck in England, but by the time he published his classic text had changed his mind and stated that it was one of the coppers struck for Major Eli Leavenworth

¹ Apart from the obverse type's similarity, there appear to be no other presently known connections to the 1786 *Immunis Columbia/NJ Shield* variety. A technical and metrological study of the NJ Shield variety would prove useful.

I would like to acknowledge the assistance of the following individuals, who either read the manuscript prior to publication and made valuable suggestions, or provided some of the photographic plates that accompany it: William T. Anton, Jr., Q. David Bowers, Walter Breen, Dr. Philip Mossman, Eric P. Newman, James Spilman, and Gary Trudgen. Cathy Dumont, staff photographer at Bowers and Merena, took most of the photographs for this paper.

As the reader will discover, the conclusions I have reached are both revisionary and controversial, and will not be easily adopted. I should note that the individuals who have reviewed draft copies of this paper do not all accept its theses without qualification.

² I owe this reference to Eric P. Newman, who brought it to my attention. There may have been a specimen sold in the Cogan auction of the year previous, but I have not been able to locate the relevant catalogue to confirm this.

³ *An Historical Account of American Coinage* (Albany, NY: 1858), pp. 80-81. Hickox also attributed the 1786 *Immunis/NJ Shield* type to Reed. The Colonel Reed he referred to was not otherwise identified, but may have been the Seth Reed of Uxbridge, Massachusetts who petitioned the General Court in March, 1786 for a coinage contract for silver and copper coins, to be made from native ores. Reed's petition was referred over to the next sitting, pending receipt of larger samples of the ores he proposed using. During this interval, of course, Massachusetts decided to make its coinage a state operated business.

⁴ *The American Numismatical Manual* (Philadelphia: 1859), p. 123.

⁵ *Coins, Medals, and Seals...Coin in America* [Chapter VI], (New York: 1861). Repr. in *The Colonial Newsletter* (1971), CMS-13.

⁶ *Collection de monnaies et de medailles de l'Amérique du Nord de 1652 à 1858. Offerte à la Bibliothèque Impériale* (Paris: Laine & Havard, 1861), p. 40. Vattemare says: "Quoique frappée à Boston, cette pièce d'une grande rareté, doit être considérée comme monnaie d'essai pour l'usage de la Confédération".

at Machin's Mills. Crosby also classed the issue as a pattern, but did not mention that if Leavenworth were indeed responsible for it, then it would have had to have been struck during (or even following) the fall of 1788.⁷ Based upon what he saw as punch linkages among the 1787 *Immunis Columbia* and the *Non Vi Virtute Vici*, the *Liber Natus Libertatem Defendo*, and the George Clinton coppers, Crosby stated "...we consider them also the work of the same artist that cut the dies before referred to [i.e., James F. Atlee]."⁸ Not surprisingly, numismatic writers in the generation following Crosby adopted his analysis of the issue without further comment. In a presentation to the American Numismatic Society on March 15, 1913 entitled "New York Colonial Coinage", Edgar H. Adams generally accepted Crosby's work as the basis for his own analysis.⁹

The first hint that Crosby's attribution of the 1787 *Immunis Columbia* to Major Eli Leavenworth might require revision can be found in Damon G. Douglas' "An Unusual *Immunis Columbia* Cent"¹⁰. Douglas had found a specimen in Col. Phares O. Sigler's collection which had been struck over a 1786 New Jersey copper, Maris 26-S. That example weighed 131.0 grains but was a full 29.0 mm in diameter, much wider than most others seen. Douglas noted that the punches used on the overtype's dies were mostly identical to those used on New Jersey coppers. Without attributing the *Immunis* dies to Atlee, Douglas implied in his announcement of the discovery that a stronger connection to the New Jersey coinage operations probably existed than even Crosby had suspected.

James F. Atlee's role as a die-cutter was elaborated by Eric P. Newman in "A Recently Discovered Coin Solves a Vermont Enigma"¹¹. Newman named Atlee as the die maker for the Machin's Mills operation, and suggested that among the "implements" loaned to the Machin's partnership by James and Samuel Atlee were obverse and reverse device punches for imitation British halfpence. Walter Breen expanded and cemented the Atlee-New Jersey connection, and suggested that Major Leavenworth's coppers might have been struck in what Breen called the Brasher-Bailey New York City mint, in "Brasher and Bailey: Pioneer New York Coiners, 1787-1792".¹² Breen's study was the first modern one to attribute particular

7 The Holbrook-Wadsworth committee which reported to the Connecticut Assembly on the activities of the Company for Coining Coppers was empowered in January, 1789. It met on April 7 to draft its report, which was offered to the Assembly, through intermediaries, two days later. Leavenworth's activities were dated by the committee to the "...last fall...". Sylvester S. Crosby, *The Early Coins of America* (Boston: 1875), p. 223.

8 *Ibid*, p. 319. The chief punch linkage he saw, of course, was the now famous "Atlee Broken A". Crosby was the first to attribute this letter punch to James F. Atlee. All subsequent authors, with one exception to be noted later, have followed Crosby in this attribution without once questioning his authority for it, which was never explicitly credited. Crosby may have based his attribution on Thomas Machin, Jr.'s recollection of Atlee, which was related to Dr. F.B. Hough and later printed by E.M. Ruttenber in his *History of the County of Orange* (1875). Machin, Jr. named Atlee as his father's engraver. See my "Halloween at Machin's Mills", *The Colonial Newsletter*, v. 30, n. 3 (October, 1990), seq. pp. 1190-1191, which discusses the younger Machin's colorful story and suggests an alternative explanation of its significance. Whatever James F. Atlee's role may have been, this present essay suggests that it has been elaborated upon far beyond the justifying evidence for it.

9 *The Numismatist*, v. 26, n. 4 (April, 1913), pp. 219-222. Adams was the foremost numismatic researcher of his time. His acceptance of Crosby's decision about the 1787 *Immunis Columbia* illustrates just how "mainstream" it had become.

10 *The Numismatist*, v.57, n. 8 (August, 1944), p. 700. The specimen discussed was illustrated.

11 *Centennial Publication of the American Numismatic Society* (N.Y.: American Numismatic Society, 1958), pp. 531-542.

12 *Ibid*, pp. 137-145. The need to date Leavenworth's coppers to late 1788 at the earliest was not discussed.

Connecticut and New Jersey die varieties to Atlee's hand, based upon the punch linkages first observed by Crosby and stylistic similarities noted by Breen. These attributions were repeated, and others added, in his organization of the state coppers in Pine Tree Auction Company's catalogue of sale held with the 1975 Early American Coppers convention, and later in a seminal study entitled "Legal and Illegal Connecticut Mints, 1785-1789".¹³ Kenneth Bressett also touched on Atlee's role as a die-cutter in "Vermont Copper Coinage".¹⁴

A decade earlier, the Atlee connection had been attacked, indirectly for the 1787 *Immunis Columbia*. In a series of suggestive, controversial, articles by Everett T. Sipsey.¹⁵ Despite the highly speculative nature of some of the author's conclusions, Sipsey was the first to attempt to attribute state copper series to individuals about whom something other than simply a name was known. Sipsey canvassed the rosters of gold and silversmiths for likely candidates for die-cutters. Crosby, on the other hand, had decided upon James F. Atlee on the basis of statements in the April 18, 1787 Machin's Mills indenture and what he gleaned from Ruttenber.¹⁶ Whether Sipsey's dismissal of Atlee was right or wrong must await further, biographical, research.¹⁷ His methodology of attribution, however, was more thorough than any that had been published before, as it was based upon a sounder historical treatment of the evidence.

The first analysis devoted solely to the 1787 *Immunis Columbia* appeared when Walter Breen published "The 'New York' IMMUNIS: A Mystery Unraveled".¹⁸ Breen dated the striking of the issue to March-June, 1787, based upon the survival of two examples which were overstruck on NJ M. 26-S host coins. Following Crosby, he attributed the *Immunis* dies to James F. Atlee, and said the types were copied from the 1785 *Immune* and 1786 *Immunis Columbia* coppers, which he attributed in turn to the English engraver William Wyon. Like Crosby before him, Breen also called it a pattern. He stated that the planchet stock used for the issue was unlike anything in the Vermont, Connecticut, or Machin's Mills series, but was identical in fabric to the 1787 curved beam New Jersey coppers, and therefore had been made at the Rahway mint. He believed the weight standard employed for this issue was identical to that of the

¹³ *Studies on Money in Early America* (N.Y.: American Numismatic Society, 1976), pp. 105-133.

¹⁴ *Ibid.*, pp. 173-198. The mint attributions by Bressett were made in collaboration with Breen.

¹⁵ "New Facts and Ideas on the State Coinages". *The Colonial Newsletter*, v.5, n. 5 (October, 1964), seq. pp. 120-129; "Dies by Wyon: An Exercise in Fact and Supposition". *Ibid.*, v. 6, n. 2 (December, 1965), seq. pp. 154-159 and v. 6, n. 3 (March-June, 1966), seq. pp. 168-172. Sipsey's observations about the origin of New Jersey reverse C which appeared in the second referenced article are highly important but have been generally ignored.

¹⁶ The statements referred to in the indenture read: "And the said Samuel Atlee, and James F. Atlee being possessed of certain implements for carrying on said trade, do agree to lend them to the parties to these presents for and during the continuance of their copartnership without any fee or reward for the same." The "said trade" which was to occupy James Atlee and Thomas Machin was later on defined as "...the manufactory of hardware...", and was specifically distinguished in the indenture from the "...other joint business..." partners Samuel Atlee, David Brooks, and James Grier were to be concerned with. Crosby, pp. 192-196. The "implements" were not defined; Crosby determined they must have been die-cutting tools and all later writers have accepted this reading. James F. Atlee's role was not defined; Crosby assumed him to have been the die-sinker for the coinage operation, and the appearance of the broken A punch across several copper series led him to attribute Connecticuts, Vermonsts, New Jerseys, and a host of undocumented issues to James F. Atlee. All later writers, save Sipsey, have followed Crosby's lead in this, too. It appears that a rather elaborate superstructure has been erected, through inference, upon documentary evidence which is not entirely clear in its meaning.

¹⁷ Gary Trudgen, the biographer of early American coiners and associates, is currently investigating the Atlee family.

¹⁸ *The Colonial Newsletter*, v. 18, n. 1 (April, 1979), seq. pp. 668-676.

contemporary Irish halfpenny (52/lb, about 135 grains), which had been learned from Walter Mould, who Breen believed brought some of Wyon's dies (NJ reverse C, among others) and samples to America. Finding that Matthias Ogden, who figured prominently in the New Jersey copper coinage, had made a proposal to the Continental Congress for a contract coinage on March 23, 1787, Breen decided that the 1787 *Immunis Columbia* coppers were the samples Ogden had submitted in support of his application.

Breen's essay, building upon Crosby's earlier work and his own earlier work, has become the basis for all later statements and opinions about the 1787 *Immunis Columbia* coppers. More importantly, together with his study on Connecticut mints and the 1975 EAC cataloguing, it is also the foundation upon which later authors have built their own attribution and dating systems for otherwise undocumented copper issues, such as the 1785 *Immune Columbia*, 1786 *Immunis Columbia*, *Non Vi Virtute Vici*, George Clinton, and *Liber Natus Libertatem Defendo* issues.¹⁹

Two recent articles have elaborated upon Breen's earlier work and have created a chronological framework for James F. Atlee's activities where one had not existed before. In "James F. Atlee's Imitation British Halfpence" and "James Atlee's Halfpence", Gary Trudgen distinguished four groups of dies he believed were cut by Atlee from 1786 through 1788 when, in Trudgen's opinion, Atlee's activities as an engraver seem to have ceased.²⁰ He followed Breen when dating the 1787 *Immunis Columbia* dies without expressly discussing the issue, however.

The most recent opinion about the 1787 *Immunis Columbia* copper may be read in Breen's magisterial *Complete Encyclopedia of U.S. and Colonial Coins*.²¹ In this appreciation, Breen re-stated his opinion that the issue began as samples to support Ogden's coinage proposal of March 23, 1787, but qualified it by saying that the samples were "...almost certainly the earliest [die states, i.e., the large flan variety] of the 1787 *IMMUNIS COLUMBIA* coppers."²² Since

19 These have long been called patterns, because of their apparent low mintages and unusual inscriptions. There is, however, no credible evidence of their true nature or function. Low mintage, obviously, does not necessarily imply pattern status. Unusual legends may be of uncertain import to us today, but may have been thoroughly understandable to contemporaries. The *Inimica Tyrannis America/Americana* coppers are a case in point. Their legends are said to have derived from a suggestion by Robert Morris of 1782, later adopted by Thomas Jefferson in 1785. The standard erected by Col. Alexander Hamilton's battalion when it occupied the first parallel trench opened at the siege of Yorktown (October 7, 1781) was emblazoned with an arm in armor holding a drawn sword, thirteen other swords linked together, and the motto "Manus Haec Inimica Tyrannis". These devices had been specified earlier in Major Jonathan Gostelove's *A Return of ye New Standards & Division Colours for ye Use of ye Army of ye United States of America*, drawn up in the summer, 1778. Clearly, the motto's sentiment had been abroad in the land and the coppers simply echo a popular political slogan of the times.

20 *The Colonial Newsletter*, v. 27, n. 1 (March, 1987), seq. pp. 966-979; *Penny Wise*, v. 22, n. 6 (November 15, 1988), pp. 340-350, respectively. The first was a more technically complete study and was plated. The second largely recapitulated the first, but refined the chronology and presented it in an abbreviated format. Trudgen has expanded upon Crosby's interpretation of the ambiguous term "implements", found in the Machin's indenture, and now suggests that the "implements" included "...all the machinery (press, planchet cutter, rollers, etc.) required to make Machin's Mills operational." Private communication to the present author. See also Trudgen's "Matthias Ogden - New Jersey State Coiner" in *The Colonial Newsletter*, v. 28, n. 2 (June, 1988), seq. pp. 1032-1051, and "Corrections" in *ibid*, v. 29, n. 2 (August, 1989), seq. p. 1099; and my own "Comments on 'Matthias Ogden - New Jersey State Coiner'" in *ibid*, v. 28, n. 3 (November, 1988), seq. pp. 1071-1072.

21 (N.Y.: F.C.I. Press/Doubleday, 1988), pp. 123-124.

22 *ibid*, p. 123.

James Jarvis was ultimately successful in winning what became the Fugio contract (April 21, 1787). Breen dated the samples as having been struck between March 23 and April 21 of that year. Those few overstruck on host coins he called "trial impressions". He revised his earlier (1979) study by stating that the balance of the issue, which he estimated at "...certainly thousands, possibly tens of thousands.", was struck after April 21, before August 1, 1787, when the New York State act (passed April 20) which regulated the coppers then in circulation went into effect. Since Breen had attributed the issue to the Rahway mint, and since he believed that the Rahway operations closed on June 1, 1787, Breen dated the *Immunis* issue April 21 to June 1, 1787.

This review of the previous literature is important for two reasons. In the first place, our understanding of the 1787 *Immunis Columbia* would be incomplete without taking into account earlier writer's opinions and observations about it. Secondly, it should be clear by now that the complex attribution schemes, and precise dating systems, for varieties credited to James F. Atlee ultimately rely upon an attribution based upon equivocal texts and visual identifications of punches made over a century ago. For reasons which will become clear later in this paper, the 1787 *Immunis Columbia* coppers offer an unequalled opportunity to test this attribution, and with it, the entire framework of later attributions to Atlee that have been made since 1875.

The Morphology of the 1787 *Immunis Columbia* Coppers

The letter A punch used in the obverse legend *IMMUNIS COLUMBIA* appears broken above the cross bar, leaving a void of varying depth between that element and the peak. This is, of course, the famous "Atlee Broken A", which has been taken as his "trademark" and a sign of his presence as a die-cutter in the mints whose products bear this apparently distinctive punch.²³ Among New Jersey coppers the obverse dies which bear the broken A are : Maris-13, 15, 18, 23, 26, 28, 32, 33, 41, 42, 52, 68, and 69; among Connecticut coppers: 1786 Miller-1, 1787 1.1, 1.4, 3, 1788 1; among Vermonts: Ryder-1, 12, 16, 17, 19, 29, 30, and 39; and among "non-local" coppers: 1786 *Immunis/Transposed Arrows*, 1786 *Non Vi Virtute Vici/Large Head and Small Head*, as well as the "N.J." shield variety, 1787 *Immunis Columbia*, 1787 *Indian/Excelsior Arms*, 1787 *Indian/Excelsior Eagle*, and 1787(?) *GEORGIVS III/Indian*.

The 1787 *Immunis Columbia* coppers are known struck on small (25.0-27.0 mm) and thick or large (29.0-31.0 mm) and thin flans. The former are somewhat scarce, on the order of Rarity-5+, while the latter are Rarity-7+, with four traced (a fifth is possible). The small flan variety is found on dark brown planchet stock which is often glossy in appearance. The large flan variety

²³ Crosby, and all later authors, believe that "Atlee's" Broken A was either hand repaired in the dies it made; or, that Atlee himself somehow repaired the punch, completing the A's outline. There are a series of Connecticut, Vermont and New Jersey dies that appear to show correction of the broken punch. For the purposes of this paper, only those dies which show the A punch in its broken state are assumed to be punch linked. The identity of the broken A punch across several dies of different types is not certain, however, as the enlargements in plates 2.x show.

In conversations with the author, Walter Breen has objected that any study of James F. Atlee's role as die sinker *par excellance* must include all punches hitherto attributed to his tool set, not just one, as here. It must be admitted that this essay is not a comprehensive study. Rather, it focuses upon only one punch, but one that has been considered by all other authors to be Atlee's *carte de visite*. The structure of interlocking attributions created by Crosby, Breen, Trudgen, and others is so interdependent that should one element collapse under challenge the whole edifice becomes unsound. This study suggests that the principal pier of the structure fails to carry its load, and leaves the consequent collapse for others to document.



1787 Immunitis Columbia. Small Flan variety.
Obverse. Enlarged 3x
Photo: Bowers and Merena, ex Norweb:2680

1787 New Jersey Marls 68-w
Obverse. Enlarged 3x
Photo: Bowers and Merena, ex Ryder-Boyd:1276





1787 Connecticut Miller 1.1-A

Obverse. Enlarged 3x

Photo: Bowers and Merena, ex Taylor:2391



1787 Vermont Ryder 12

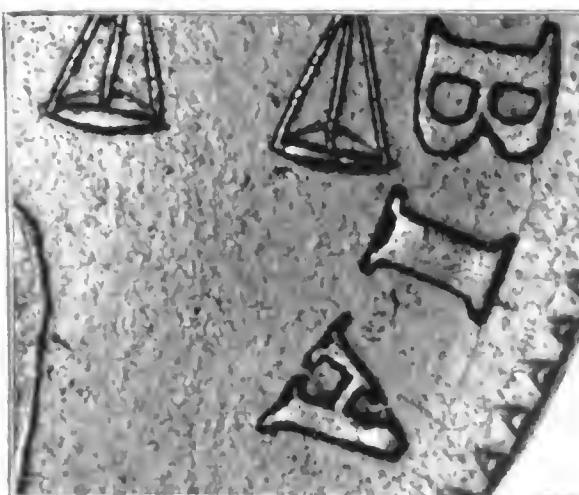
Obverse. Enlarged 3x

Photo: Bowers and Merena, ex Taylor:2067

1787 Vermont
Ryder 12
ex Taylor:2067

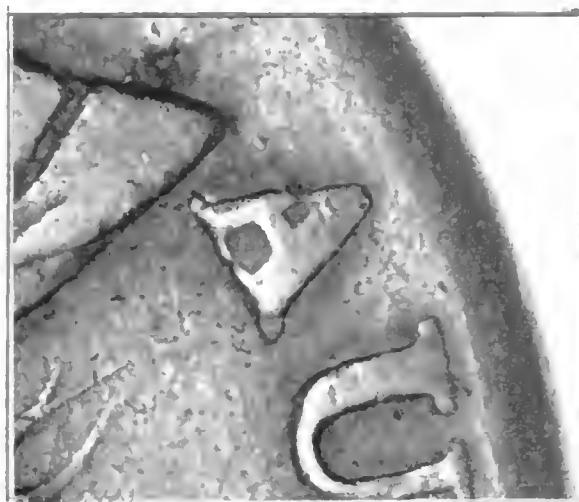


1787
Immunis Columbia
ex Norweb:2680



It is apparent
that while
there are
superficial,
naked eye,
similarities
among these
three when
seen life-size,
when
enlarged
these resolve
into
dissimilarities

1787 Connecticut
Miller 1.1-A
ex Taylor:2391



Note
especially the
broken A on
1787
Connecticut
Miller 1.1-A

is more reddish-brown in color. A few of the small flan variety have served as host coins for George Clinton copper overstrikes.²⁴ One is known with an ornamented edge (Garrett:604), the significance of which is suggestive, but uncertain. Another small flan specimen, Stack's/Groves(11/74): 338, had been struck on a clipped planchet which was very reminiscent of 1787 Connecticut Miller 1.1-A, another of the broken A family of dies. Eleven examples of the small flan variety weighed yielded an average weight of 151.4 grains (range: 123.5 low, 173.4 high weight) and a median weight of 155.8 grains.²⁵ The first standard deviation of this sample was a very high $+/-.16.3$ grains.²⁶ All four traced survivors of the large flan variety were similarly analyzed.²⁷ The average weight was 150.4 grains (range: 131.0 low, 167.5 high weight), the median 151.5 grains, and the first standard deviation was 13.2 grains.

While there is a clear distinction to be made between the two varieties' diameters, their weights and standard deviations are very close to each other's. It seems that both varieties were issued at the same weight standard, which appears to have been the legal weight of New Jersey coppers, 150.0 grains. Obviously, the small flan variety was not struck to an Irish halfpenny standard, and it is not necessary to propose that its coiner(s) learned about the weights of Hibernia halfpence from Walter Mould. The weight and diameter ranges for the small flan variety, as they appear in Breen's Encyclopedia, should be revised.



The small flan Immunis variety is always found with varying degrees of die breakage and failure. The obverse die failed in its left field (the right field of the coins it struck), sinking under

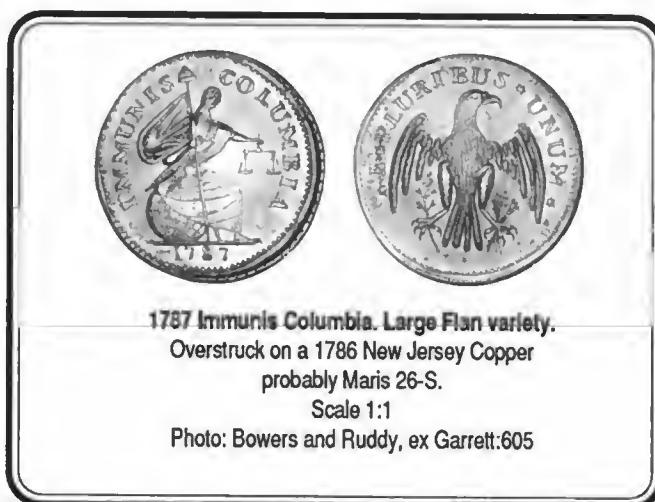
²⁴ Any revision of the dating of the 1787 Immunis Columbia coppers necessarily forces a similar re-dating of the George Clinton and Liber Natus Libertatem Defendo coppers and, consequently, a revision of the attributions that have been proposed for those issues.

²⁵ I.e., the weight of the specimen exactly in the middle of the range between the lightest and heaviest specimens.

²⁶ I.e., a $+/-.attribute$ of the average (mean) which indicates the weight range of the majority of the specimens in the sample.

²⁷ These are: (1) Parmelee-Ten Eyck-Newcomer-Green-private midwestern collection; (2) Mills-Garrett:605; (3) 1976 ANA:73; (4) ex Colonel Phares O. Sigler Collection. Picker:175 was incorrectly described as being a large flan specimen; it is actually on a thick 25.1 mm diameter flan. It is one of the few small flan specimens to show a full date, and this misled the Picker cataloguer. The Picker coin is now in a major Eastern collection.

Columbia's left arm and the scales of Justice she holds. The reverse appears to have clashed heavily very early in its life, leaving a line of intaglio denticles visible on struck coins at the beginning of the legend (E*PL). This die broke in two places (possibly a result of the dies clashing) from the eagle's beak to the root of its left wing and from the third U in the legend along the leading edge of the eagle's left wing, where it joined the first break. The clash below E*PL is found associated with all stages of the obverse failure, but was not progressive, itself. The two reverse breaks appeared early in the life of the die, but were also not progressive. The obverse failure, however, did increase in severity, from the minor sinking of Oechsner:1236 to the near terminal state of Bowers & Merena (6/90):3997.²⁸



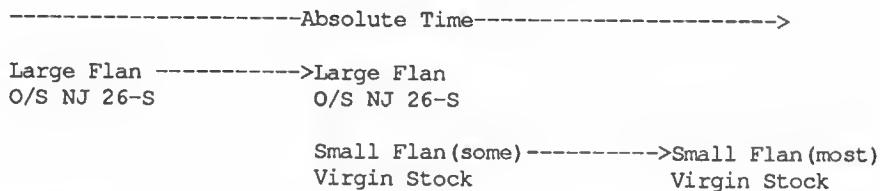
The large flan variety, on the other hand, presents a more complicated history. Garrett:605 was struck from the clashed and broken state of the reverse die. The obverse of the Garrett piece was in a very early stage of failure. The Stack's(1976 ANA):73, Colonel Phares O. Sigler, and Parmelee-Ten Eyck coins were in the perfect states of the two dies.

From these observations, it appears that the large flan variety was the first struck, while the dies were unbroken and had not yet clashed. Then, the reverse clashed with a mis-aligned die which was probably the obverse of the 1787 *Immunis Columbia*, leaving the reverse broken.²⁹ In this stage, the final quantity of the large flan variety was coined, before the obverse began to fail noticeably, together with the first few examples of the small flans. Thereafter, the dies were used to strike the small flan variety exclusively, since no large flan example is known with advanced failure of the obverse apparent.

²⁸ Garrett:604, the unique Small Flan example with ornamented edge, was in an early stage of obverse failure, fully clashed and broken reverse state. If the edge device is to suggest a "finishing touch" for a coinage contract proposal sample, the earlier struck Large Flan specimens should also show edge ornamentation, which they do not. See below, in the text.

²⁹ The intaglio clashmarks describe an arc which does not parallel the circumference of the injured die. Therefore, the two dies must have been out of alignment at the time they clashed. The obverse *Immunis* die must have been mounted in a moveable housing that could be linearly adjusted to position it directly over the reverse during coining. The emission sequence for the 1787 *Immunis Columbia* issue, itself, is universally accepted.

The emission sequence for the 1787 Immunis Columbia coppers appears to be as follows:



This is in accordance with Breen's latest opinion about the 1787 Immunis Columbia issue. The large planchet specimens would correspond to what he called "trial impressions", while the earliest small planchet pieces would be the "samples" he presumed Ogden made to support his March 23, 1787 bid for a coinage contract from the Continental Congress. The later small planchet pieces would, therefore, be the coinage Breen believed was struck April 21 to June 1, 1787. The sequence also accords with Trudgen's reconstruction of Atlee's die-cutting career, since the latter was based upon Breen's own reconstructed chronology for the Rahway mint and Atlee's role there. Both reconstructions, however, rely upon dating the sinking of, and coining from, the NJ M.26-S dies before March 23, 1787, since coins struck from them served as hosts for the first 1787 Immunis Columbia coppers struck.

The New Jersey Connection

All of the four known large flan specimens were struck over 1786 New Jersey host coins. Three were struck over 1786 Maris 26-S (the Colonel Phares O. Sigler, Parmelee-Ten Eyck, and 1976 ANA specimens), while the fourth (Garrett:605) was too sharply struck to allow the undertype to be attributed. It is nearly certain, however, that the host was also an M.26-S, since its weight and diameter (both attributes of the host, of course), and the die axis of the undertype, correspond to the parameters expected of 26-S. Further, the visible numeral and letter punches of the NJ host, and their layouts, are identical to those of NJ M.26-S and no other. Clearly, 1786 dated New Jersey M.26-S either pre-dated the large flan 1787 Immunis Columbia, or was contemporaneous with it. Equally clearly, M.26-S pre-dated or was contemporary with almost all of the small flan variety. It is interesting to note that the identifiable host coins' variety was also one struck from an obverse die bearing the broken A punch.

Perfect Die State, New Jersey Maris 16-S

Scale 1:1

Photo: CNL Archives



Broken Die State, New Jersey Maris 26-S

Scale 1:1

Photo: Bowers and Merena, ex Taylor:2196

New Jersey reverse S is known married to five obverses: 16, 25, 26, 27, and 28. The first three obverses were dated 1786 in the die, the other two 1787. Obverses 26 and 28 bear the broken A punch in their legends but the others do not. Obverses 25 and 26 were singletons, known in no other combination than with S. Obverse 16 was married to two other reverses, J and d; obverse 27 was mated to j in addition to S; and obverse 28 was also married to one other reverse, L. The extended reverse S family, then, includes the following combinations: 16-J, 16-S, 16-d, 25-S, and 26-S dated 1786 in the dies; 27-S, 27-j, 28-L, and 28-S dated 1787 in the dies.

Reverse S is known in a perfect and broken state. The die failure can be described as a comma shaped break above the R of PLURIBUS, and is found on almost every specimen known. In fact, of the five reverse S marriages, only one, the unique example of 16-S, is known without the break.³⁰ All of the overstruck 1787 Immunis Columbia coppers whose undertypes are identifiable were struck on specimens of 26-S in the broken reverse state. The sole surviving unbroken 16-S was, therefore, struck before the Immunis Columbia hosts (i.e., NJ 26-S), and thus it pre-dates the entire emission of the Immunis issue.

By virtue of its shared die with the host coins of the earliest Immunis Columbias, the unique 16-S struck from the unbroken reverse can be added to the emission sequence yielding the following revision:

----->Absolute Time----->

NJ 16-S-->Large Flan ---->Large Flan
O/S NJ 26-S O/S NJ 26-S

Small Flan (some)--->Small Flan (most)
Virgin Stock Virgin Stock

Perfect Die State. New Jersey Marls 16-J
Scale 1:1

Photo: Bowers and Merena, ex Ryder-Boyd:1565



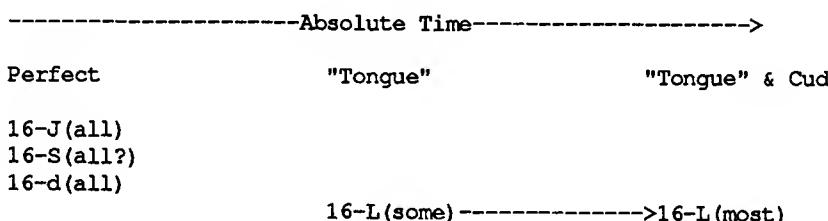
"Tongue" Break and Cud. New Jersey Marls 16-L

Scale 1:1

Photo: Bowers and Merena, ex Ryder-Boyd:1218

³⁰ Combination 16-S was first published and plated by Stanley Sherr and Norman Pulien in *The Colonial Newsletter*, v. 15, n. 2 (May, 1976), seq. p. 554. It passed from the Pulien collection to that of a noted New Jersey specialist.

Obverse 16, itself, can be instructive, for it, too, is known in a perfect and broken state. It is one of the famous nicknamed New Jersey varieties, for in its broken state the horse appears to have a "Protruding Tongue". An additional break, a cud at the rim over RE, is also commonly found on this obverse. The "tongue" break preceded the rim failure.³¹ This die was married to four reverses, creating 16-J, 16-L, 16-S, and 16-d. The first is scarce, the second common, the third is unique, and the last is very rare.³² Combination 16-J is always found in the perfect state of the obverse, without either of the two breaks.³³ Combination 16-L is found with either the "tongue" break or the "tongue" and rim cud together, and was the combination which originally inspired the "Protruding Tongue" nickname.³⁴ The unique example of 16-S is in the perfect obverse state.³⁵ The three surviving specimens of 16-d are also in the perfect obverse state. These observations allow the reconstruction of the die emission sequence for obverse 16, which appears to have been:



If we now combine the emission sequence developed for obverse 16 with the sequence discovered for 16-S and the 1787 *Immunis Columbia*, we see that New Jersey combinations 16-J, 16-S, and 16-d were contemporaries and apparently pre-dated the striking of the *Immunis*. While we do not know how long reverse S lasted in the press before it broke, the fact that all known specimens save one example of 16-S, which itself is unique today, are broken, strongly suggests that the break occurred very shortly after mounting the die. Similarly, we do not know how long obverse 16 lasted before it, too, broke. The fact that the vast majority of all the specimens known of the four obverse 16 marriages are broken also strongly suggests that the "tongue" break occurred quite early in the life of the die. The observations noted above about the emission sequence of obverse 16, and the rarity of combinations in its unbroken state, show that in terms of absolute chronology 16-J and 16-d must have been struck at the same time, or very shortly after, 16-S. This is further supported by the fact that reverse S, itself, broke very soon after it was first employed, since all but one example known show the comma-shaped break over R. It is more than likely, therefore, that 16-J and 16-d also pre-dated the 1787 *Immunis Columbias*. If they did not, then they must at the least have been coined contemporaneously with the earliest large flan specimens. To

³¹ This can be seen on Stack's/Douglas(6/75):69, for example, a 16-L with the "tongue" but without the rim cud.

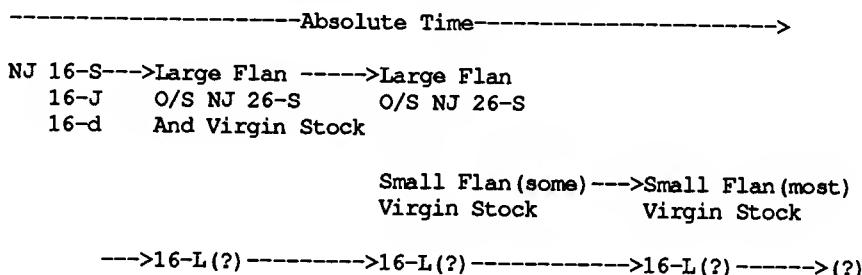
³² In a database of over 2,400 New Jersey coppers selected from auction sales, public, and private collections, the present writer lists 15 examples of 16-J and 36 specimens of 16-L. Although 16-J is classed as Rarity-6 today, Maris considered it more common. Its true rarity is probably 5 on the Sheldon scale. Only three examples of 16-d exist, and 16-S is unique.

³³ Examples are Taylor:2171 and 2172; Bowers & Merena (3/90):1217; Stack's/Bareford:116; ANS Coll.; Stack's/Oechsner:1251; New Jersey Historical Society Coll.; Stack's FPL(12/89); Bowers & Merena/Sherr:3143; Stack's/Picker:187; private, Western Coll.(2).

³⁴ No example of 16-L in the perfect obverse state appears to be known. Similarly, no example of 16-J with a "tongue" break appears to have survived.

³⁵ These are: New Jersey Historical Society (Canfield) Coll; major Eastern private collection; major Western private collection.

suggest otherwise would require assuming that 16-S was struck in large quantities over a long period of time but for some unknown reason all but one coin have since disappeared. Combining the two emission sequences the following is suggested:



It is impossible to place combination 16-L into the above with any degree of chronological accuracy, since all that can be said about it is that it was certainly struck after the other three obverse 16 combinations. The observation that it must have been struck soon after 16-J, 16-S, and 16-d is suggested by the rarity of the unbroken obverse combinations. Whether the final appearance of 16-L should be located where it has been, however, is open to challenge, since its temporal duration in the emission sequence is uncertain. It may have post-dated the *Immunis Columbia* issue, may have coincided with it exactly, or may have been struck and the dies discarded because of failure before the small flan *Immunis* coppers were coined. In the above schematic, we know that 16-S preceded 26-S, and so pre-dated the earliest *Immunis Columbia*s. We also know that 16-S preceded 16-L. In the absence of a direct die link between 26-S and 16-L, however, we do not know with certainty which preceded which, or even if they were contemporaries. If we assume that rarity today reflects a short-lived coinage, then the time lag between striking 16-S and 26-S, and 16-S and 16-L, was also short-lived.³⁶

Combinations 16-d and 16-J offer further evidence for the absolute chronology of the 1787 *Immunis Columbia* coppers, in the first case through the suggestive evidence of overstriking, in the second through a reconstruction of the emission sequence of the reverse J die family.

One of the three known examples of 16-d was overstruck on a worn 1723 French copper sol.³⁷ The other two were coined on fresh planchet stock. The overstruck 16-d was not a "trial" or die set-up specimen, for two obvious reasons. In the first place, cut planchet stock must have been available to its coiners, since 16-d was not one of the first New Jersey copper

³⁶ One reviewer of this paper objected "I know from my personal studies that some dies of this period were used in pairings more than once indicating different timeline positions for a single 'variety', and these multiple time domains could be a serious problem in your analysis." (Spilman).

In the absence of progressive die damage this is absolutely correct. In the present analysis, however, it is indisputable that the unbroken state of one die preceded the broken state, and that marriages with the perfect state must have been coined prior to marriages with the broken state. This said, it is impossible to know with any accuracy how long the coinage of any one marriage lasted when it is taken out of its emission sequence. All the time flow charts in this essay are depictions of relative chronology rather loosely fixed against the broader absolute chronology of calendar years 1786-1789. This means that individual combinations are securely anchored in time relative to each other (where progressive deterioration of shared dies is observable), and their positions in absolute time relative to earlier/later shared die states are therefore sure. The exception, NJ M.16-L, is a variety which can only be characterized as having been struck after the obverse die broke.

³⁷ This is in the William T. Anton, Jr. collection.

combinations struck.³⁸ Secondly, unless the French coin had first been annealed, using a work-hardened host to test dies would unnecessarily stress them.³⁹ Logic suggests that this 16-d was struck over an annealed, worn host to create a coin which could circulate alongside other New Jersey coppers at the legal rate of 15/shilling. The most likely time frame for this is the later period in the history of the New Jersey copper coinage, when discredited and devalued coppers of all sorts were overstruck by New Jersey dies, namely, late 1788-1789, and possibly beyond. The observation that one 17-b is known struck over a similar French copper is interesting, since it is commonly accepted that the obverse 17 combinations were struck long after their apparent 1786 date.⁴⁰ The existence of the 16-d overstrike is the first hint that the by now traditional dating of the earliest large flan 1787 *Immunis Columbia* coppers to March 23-April 21, 1787 may require revision. It does not, by itself, demand such a revision, however.

In an earlier study of reverse J it was shown that 1786 dated 16-J was found in states II-IV of J, in company with examples of 1787 dated combinations 34-J, 35-J, 36-J, and 37-J. No 16-J was found in the latest state of the reverse, which only included examples of 17-J, 34-J, 35-J, 36-J, and 37-J.⁴¹ The entire reverse J family (immediate family members) appears to have been backdated, the earliest struck varieties (13-J, 14-J, 18-J, and 34-J) being coined in 1787, the latest (state V) dating from 1789-90. Combination 16-J was found to have been struck over a long period of time, from 1787/88 to 1789/90. Since that study was completed, further conclusive evidence for the backdating of the J family has been found, which here has a direct impact upon the reconstruction of the absolute chronology of the 1787 *Immunis Columbia* coppers.⁴²

This evidence takes the form of overstrikes of 34-J on late dated hosts. One 34-J, in the perfect state of the obverse but the second state of the reverse die (corresponding to the earliest issue of 16-J), is known struck over 1788 Connecticut M. 15.2-P.⁴³ Another 34-J, which itself served as the host for a 34-V, had been struck over 1788 Vermont R-16.⁴⁴ The state of the J reverse on this piece is unknown, due to the overstriking by V, but the obverse die was unbroken. A third 34-J is known overstruck on 1787 Vermont R-13, the Britannia

³⁸ The earliest New Jersey varieties struck appear to have been 18-M, 18-N, 20-N, followed by 32-T and 33-U. This observation is based upon the author's as yet unpublished reconstructed die emission sequences for the Rahway mint's coinage.

³⁹ It is entirely likely that all copper coins used as hosts for other strikes were first annealed before being taken to the presses. Whether the annealed hosts were struck while still hot, which would imply a mechanical feeding mechanism at the die face, or cold, which would not, is unknown. William Wood earlier struck his *Rosa Americana* issues while still hot, using a drop press. Consistently clipped planchets on some state copper issues, as 1787 CT Miller 1.1-A, for example, suggest an automatic feeding device at the planchet cutter. Adam Eckfeldt invented an automatic feeding device for the Philadelphia Mint's coin presses in 1793.

⁴⁰ This piece was Garrett:1408, struck over a 1774 Louis XV copper sol.

⁴¹ Michael Hodder. "New Jersey Reverse J, A Biennial Die", *American Journal of Numismatics* (Second series, 1989), August, 1990, pp. 195-237, plates 16, 17.

⁴² Readers of this paper, and the author's earlier study of reverse J, will find that the dating of state II of that die has now been pushed backward, as indicated here. This was made necessary by the discovery of two new 34-J examples struck over 1788 dated hosts, and the determination of the die emission sequence for obverse 34. The net effect of this re-dating, however, is to underline even more the backdated nature of the whole reverse J family.

⁴³ Bowers & Merena/Rescigno(11/89):1593, plated and analyzed in the catalogue by the present writer.

⁴⁴ Stack's/Picker:207, now in a major Eastern collection, plated in the catalogue. Attribution of the two undotypes has been confirmed by William T. Anton, Jr. and the present writer.

1787 New Jersey Marls 34-J
Unbroken obverse die state; reverse die state II
Overstruck on 1788 Connecticut Miller 15.2-P
Scale 1:1
Photo: Bowers and Merena, ex Saccone:1593



1787 New Jersey Marls 34-J
Overstruck on 1788 Connecticut Miller 15.2-P
Reverse - - Enlarged 2x
Photo: Bowers and Merena, ex Saccone:1593



Enlargement of reverse
from 4:00 to 6:00,
showing the visible portion
of the Connecticut
undertype's legend.
The combination of cinquefoil,
large LIB, and large stop
eliminates all Connecticut
reverses save P of 1788,
married to obverse 15.2

reverse variety, which Eric Newman has dated to 1789.⁴⁵ The obverse of this 34-J specimen showed the full cud on the 8 of the date, but the reverse was in its second state. Two of these three 34-J coins, all of which were struck on 1788 dated hosts, were in the same reverse state as the earliest appearance of 16-J in the emission sequence for the J family. The obverse state of the 34-V/34-J/R-16 specimen shows that the 34-J undertype was also struck while the reverse was in state II. Thus, it is clear that the first examples of 16-J were struck at roughly the same time that the reverse, combined with obverse 34, was overstriking 1788 Connecticut and Vermont coppers. The most likely time frame for such overstriking is, of course, late 1788-1789, and beyond, placing the coining of 16-J in the same period.



1787 New Jersey Marls 34-V, overstruck on 1787 New Jersey Marls 34-J, overstruck in turn on a 1788 Vermont, probably Ryder 12. Obverse and reverse. Enlarged 2x.

The NJ M.34-V date is in the expected position. The NJ M.34-J date can be seen between 1:00-3:00.

The 1788 VT date can be seen between 7:00-9:00.

The VT exergual line extends along the bases of CAE of the NJ M.34-V legend, ending to the right of C. Given the usual VT obverse layout, the visible 8 must be the final numeral of the VT undertype's date.

The unbroken states of both NJ obverse strikes are clear.

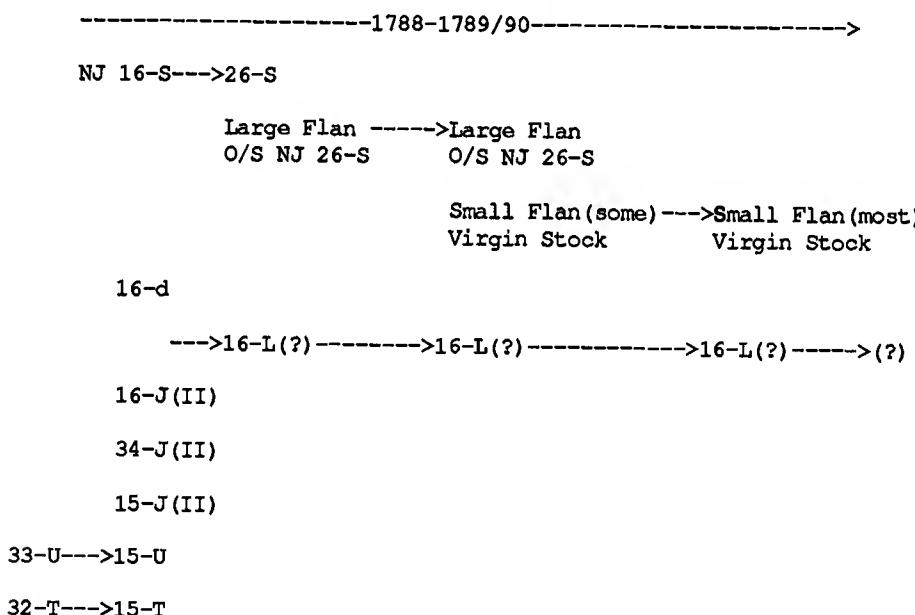
Returning to the consolidated emission sequence proposed above for the obverse 16 family and the 1787 Immunis Columbia coppers, we now find that on the basis of overstrikes on 1788 dated hosts two of the three obverse 16 combinations, 16-J and 16-d, which are in the same, unbroken obverse state as 16-S, appear to have been products of the later phases of the New Jersey coinage operation, datable to late 1788-1789, and beyond. Since 16-L was struck after 16-J and 16-d, it, too, must have been coined long after its obverse date of 1786, and should be ascribed to the later phases of the New Jersey coinage. Similarly, we know that 16-S was struck before the obverse broke, and so was contemporary with 16-J and 16-d. Therefore, as 16-S was coined before its reverse die broke, and since 26-S is found only in

⁴⁵ Newman, p.537. In addition to R-13, Newman included the Vermont/Immune Columbia, the CEORCIVS REX, and 1788 CT M.1-I among the issues he dated to the middle of 1789 as made from worn, rejected, or remaindered dies at Machin's Mills. Trudgen believes that R-13 was struck in mid-1788. Private communication to the author, 5/14/1990.

the broken state of that die, 26-S must have been struck after 16-S, and now may be dated to 1788-1789, or later. Finally, as 26-S certainly served as host for three of the overstruck large flan 1787 *Immunis Columbia* coppers, and probably did so for the fourth, the earliest of the 1787 *Immunis Columbias*, the ones Breen called "trial impressions", must also have been struck after 16-S, or 1788-1789, and later.

Further confirming the need to revise the dating of the *Immunis* coppers is the fact that 1786 dated NJ combination 15-J, only found in state II of the reverse, was struck after 1787 dated 33-U.⁴⁶ This was shown by comparing the states of obverse 15 in combination with reverses J and U, and then comparing the states of reverse U in combination with obverses 15 and 33. Clearly, 15-J was deliberately backdated by its coiners to create the fiction of an issue struck in 1786.⁴⁷ In fact, its obverse state proves it could have been coined no earlier than the second half of 1787, while what we know about the most probable date for state II of its reverse shows that its actual date of striking was even later.

By combining what we now know about the interrelationships among the obverse S and reverse J families, the 1787 *Immunis Columbia* coppers, and their probable dates of striking, our schematic of their absolute chronology may be rendered as:



This schematic is not drawn to scale, of course, since the length of the time line of absolute chronology can never be known with any real degree of precision. Rather, it should be read in a "relative" sense. That is, horizontal columns represent varieties which were contemporaries of each other, struck in roughly the same time period. Varieties placed to the left of others

⁴⁶ Michael Hodder, "New Jersey Reverse U", scheduled for publication 1991 in *The American Numismatic Association Anthology*. Preliminary results of this study, together with the die emission sequence worked out for the extended U family (15-U, 33-U, 15-J, 15-L, 15-T), were published in *The Colonial Newsletter* v. 29, n. 2 (August, 1989), seq. p. 1005. This latter also contained schematics of the emission sequences for the reverse J, f, and g families. As noted earlier, the present essay's dating of state II of reverse J supersedes earlier published work.

⁴⁷ The need to backdate an emission strongly suggests that it was minted after the expiration of the coinage contract which legalized the types.

were struck earlier.⁴⁸ Dotted lines stand for established die emission sequences, and are icons for the absolute flow of time. Distances between horizontal columns do not represent finite periods of time, of course. Finally, combination 16-L has been left partly unanchored in "time", since its relationship to 26-S, and hence to the 1787 *Immunis Columbia* coppers, is unknown.

The preponderance of the evidence presented in the schematic demands that the issue of the 1787 *Immunis Columbia* coppers be re-dated. Even given the imprecision in placing the *Immunis* in the time line, the fact that at the very least it must have been contemporaneous with one New Jersey issue struck over 1788 dated hosts (34-J), another struck over a foreign copper (16-d), two others which were first struck at the same time as 34-J and 16-d (16-S and 15-J), and two others (15-U and 15-T) which were obviously backdated, shows that the large flan variety could not have been coined in the first quarter of 1787. Since the latest large flan specimens are in the same die states as the earliest small flan examples, these latter must also have been struck at a later date. Finally, the latest state small flan pieces must also have been struck later.

It now appears that the 1787 *Immunis Columbia* coppers were not struck March 23/April 21-June 1, 1787, as has been posited by Breen and Trudgen. Rather, the earliest examples were coined during/after the period when New Jersey dies were being used to overstrike discredited and devalued coppers of other states and issues. Therefore, they could not have been made as samples to support Matthias Ogden's coinage proposal to the Continental Congress. Nor were they coined as an attempt to pass into circulation a lightweight issue before the New York State Act of April 20, 1787 went into effect (August 1). We have already seen that the mean weights of both the large and small flan varieties mirrored the 150 grain standard required of legal New Jersey coppers.⁴⁹

The James F. Atlee Connection

Was Atlee responsible for cutting the dies of the 1787 *Immunis Columbia*? Breen had posited that Atlee worked as the Rahway mint's die-cutter from the end of 1786 until June 1, 1787.⁵⁰ In this scenario, the start of Atlee's employment was made to coincide with the November 22, 1786 amendment to the New Jersey coinage contract, which severed Goadsby's and Cox's share from Walter Mould's. Since coppers could not legally be made until after that date, and since Breen attributed the broken A punch to Atlee, and because that punch appeared on dies dated 1786, Breen assumed that Atlee began sinking dies in 1786. The ending date of June 1, 1787 was chosen for two reasons. Firstly, Breen believed that Albion Cox had been sent to debtor's prison June 1, the result of suits against Cox, one of which Breen believed

⁴⁸ See note 31, above, regarding the use of this methodology.

⁴⁹ It is highly unlikely that the publication of Maris' 1881 text inspired the creation of new, rare combinations struck from NJ dies that somehow survived the intervening century in a condition sound enough for use. There has never been any hint in the literature that this may have occurred (unlike the case of the New Haven Fugio "restrikes", or the possible survival of the 1779 Rhode Island Ship token and 1776 EG FECIT Continental Currency dies). One "post-Maris" discovery germane to this study, NJ M.16-S, is in an earlier state than all the other obverse 16 combination specimens known today. A different combination, NJ M.48-X, is in an earlier state than the majority of 48-g known.

⁵⁰ Breen, *The 'New York' IMMUNIS*, seq, p. 672.

had been Instituted by Samuel Atlee (probably a relative of James').⁵¹ Breen felt that with one of its members in gaol, the Goadsby-Cox partnership was unable to continue coining, and the Rahway mint closed shortly afterwards.⁵² Secondly, James F. Atlee was a signatory to both of the Machin's Mills indentures, April 18, 1787 between the six partners and June 7, 1787 between the Machin's partnership and the Harmon, et al. Vermont partnership. Since the broken A punch, taken to be Atlee's "signature", appears on 1787 dated Vermont coppers, Breen assumed that Atlee must have begun sinking Vermont dies soon after the June 7 indenture. The date of the Machin's-Harmon partnership coincided exactly with the date Breen determined that the Rahway mint had closed, and the chronology for James F. Atlee's peregrinations seemed certain.

Working backwards from the end 1786-June 1, 1787 period of employment, which seemed conclusively established, Trudgen examined the punchlinked dies said to be Atlee's and reconstructed a broader chronology for James F. Atlee.⁵³ Prior to his stint at Rahway, Trudgen believed that Atlee was active in New York City sinking Group I dies, which he posits are punchlinked to the *Constellatio Novas* and the 1786 "New Jersey" *Immunis Columbia* (Maris 3-C), and the 1786 Connecticut dies assumed to have been Atlee's. At this time, Trudgen also believed that Atlee obtained the 1785 *Immune Columbia* die from Walter Mould, who had brought it from England, later carrying it to Machin's Mills in Newburgh, NY when he became a partner. Trudgen believed that the *Indian Liber Natus* die was engraved while Atlee was employed at Rahway, to make patterns for Thomas Machin's March 3, 1787 application to New York State for a coinage contract. Between the end of 1786 and June 1, 1787, Trudgen placed Atlee in Rahway, but with mixed loyalties. After June 1, 1787 Trudgen believed that Atlee joined with John Bailey in New York City to create Group II dies, which are said to be punchlinked to the Brasher doubloons (includlng the *LIMA* style), the *Nova Eboracs*, *Excelsiors*, and Bailey's "own" New Jersey coppers.⁵⁴ This partnership ended one month later, on July 1, when Atlee left New York City for Newburgh, N.Y., to begin his work for the Machin's Mills partnership. Trudgen dated his Group III dies to the second half of 1787-1788, engraved by Atlee at Machin's Mills. His Group IV obverse dies were said to have been cut earlier, in New York City in 1786, but not used until the summer 1789, at Machin's Mills.

Trudgen's reconstructed chronology hinges upon the dates of Atlee's presence in Rahway established by Breen, earlier. Breen's, in turn, rests upon several assumptions and observations, chief of which, of course, is that a common punch proves a common die-sinker. This, in turn, derives from an attribution made by Crosby in 1875.

All previous authors who have studied New Jersey's copper coinage have assumed that the obverse dates of varieties not known overstruck on later dated hosts are accurate indicators of their absolute chronology. Thus, 1786 dated coppers were struck in 1786, the exception of the obverse 17 family being taken as proving the rule. If a 1786 dated coin has a broken A in its obverse legend, that variety is assumed to have been struck in 1786 from dies engraved by Atlee.⁵⁵ It has been demonstrated, here and elsewhere, that the dates appearing on New Jersey coppers are not a safe guide to their actual dates of striking. More than one-third of all known New Jersey varieties are dated 1786 in their dies, and since these include many of the

51 As will be seen later, Samuel Atlee did not sue Cox. Rather, he and Cox were sued jointly by Thomas Goadsby, months later than June.

52 Breen, *Encyclopedia*, p.79.

53 Trudgen, *opp. cit.passim*.

54 See Trudgen's "John Bailey: New York City Coiner." *The Colonial Newsletter* v. 30, n. 2 (July, 1990), seq. pp. 1153-1185.

55 See Breen, *Encyclopedia*, nos. 884-897 for a total of 43 of the 46 different Maris varieties dated 1786.

commonest die combinations, account for at least half of all known New Jersey coppers today. Common sense suggests that this is somewhat more than might have been expected to have been coined from November 22, 1786 to January 1, 1787.

Were any New Jersey coppers actually struck at Rahway in 1786? In the absence of mint records no answer to this question can be made without challenge. Certainly by March 16, 1787 coining had already commenced, since on that date the Rahway partnership shipped 10,991 coppers to James Mott, NJ treasurer, by stage.⁵⁶ Rahway's readiness at this time is further confirmed by Matthias Ogden's March 23, 1787 application to the Board of Treasury of the Continental Congress for the federal coinage contract, in which Ogden states "In 14 days we can begin the Work every thing necessary is already prepared and before any Company on this Continent...can Erect works and a sufficient Establishment to carry the Contract into Effect-we can nearly finish it..."⁵⁷

Dies must have been cut and ready for use before March 16, 1787, but how far in advance of that date cannot be known with any degree of certainty. If the first seigniorage payment of 10,991 coppers was actually 10% of the total struck up to March 16, then the Rahway partners had coined only 109,910 coppers in the four months from November 22, 1786 to March 16, 1787. This suggests a very low production rate of 27,478 per month, equalling slightly more than 900 coppers struck per calendar day. While the actual production rate achieved by Rahway is also unknown, the total number of coppers struck before the end of 1786 must have been lower than 109,910. Taking the total of all seigniorage payments made 1787-1788 by the Rahway partnership and multiplying by 10, we find that Rahway paid its tithe on nearly the full 2,000,000 coppers it had originally been authorized to strike. The selgniorage for the first four months of operations, 109,910, is about 1/20th of that number, yet more than one third of the known New Jersey dies were dated 1786.

Clearly, the majority of 1786 dated New Jersey dies were not actually used in that year. Whether the 46 dies dated 1786 were sunk before December 31 of that year is, naturally, unknown. It is entirely likely that some were. However, we know that many of the 1786 dated dies were not mounted in the press until later in 1787 (15-U and 15-T, for example, both of which share the broken A punch), and that others were not first used until 1788-1789 (16-J, 16-S, 16-d). In fact, none of the 1786 dated dies that share the broken A punch appears to have been used before the majority of 1787 dated 32-T and 33-U coppers had been struck! If Atlee had cut these dies in 1786, they had stayed on the shelf in the colner's room for many months before their first employment.

The only reasons offered for placing James F. Atlee in Rahway in 1786 are: the dates of the June 1 and November 22, 1786 authorizing acts which established the New Jersey coinage; the simple existence of 1786 dated New Jersey coppers; and the appearance on five of them of the broken A punch, which is assumed to have been Atlee's. The first reason is insufficient on its face, since Atlee was not named in the acts. The second is hazardous to the argument, since obverse dates in the New Jersey series do not always correspond to the actual time of sinking or striking the dies so dated. The last is an attribution that can never be proved and which is without firm basis in fact. There are, in other words, no reasons that compel us to place James F. Atlee in Rahway in 1786. Given what we know about the small number of dies

56 Walter Breen first published Mott's Sundry Receipts Book in "Mintage Figures for the New Jersey Coinage" in *The Colonial Newsletter*, v. 9, n. 1 (March, 1970), seq. pp. 295-297. This first payment by the Goadsby-Cox partnership was recorded as £36/12/9 worth of coppers. Breen's equivalent was 10,989 coppers. The difference between Breen's and my own sterling equivalents is a result of Breen's rounding off error.

57 *Papers of the Continental Congress*, n. 139, v. II, pp. 497 and 500.

dated 1786 that share the broken A punch, the common practise of backdating dies at Rahway, and the number of coppers struck there by March 16, 1787, it is more likely that Atlee was at his most active in New Jersey in 1787 than 1786.

If the date of the beginning of Atlee's presumed employment at the Rahway mint is without firm basis in fact, the terminal date of June 1, 1787 is even less certain. It has been stated that the Rahway partnership was breaking up in the months leading to June, and when Cox was forced into debtor's prison on June 1 Rahway was effectively out of the coining business.⁵⁸ The absence of payments of seigniorage to the New Jersey treasurer from April to October, 1787, is taken as further evidence of this hiatus.⁵⁹ In this scenario, Atlee is presumed to have seen how financially unstable the Rahway operation was, to have cemented a relationship with Thomas Machin by allowing coining from his Indian Liber Natus dies for Machin's March 3, 1787 coinage proposal to New York State, and to have left Rahway's employ on or just before June 1.⁶⁰ Six days later, Atlee signed the Machin's-Harmon partnership indenture and in July began making Vermont dies.

Albion Cox's legal affairs were a tangle of suits that began almost as soon as he first arrived in New York City from London. Between 1783 and 1787 he was involved as plaintiff, as well as defendant, in over ten different suits most of which were heard in New York City's Mayor's Court.⁶¹ On December 6, 1785 Cox was arrested on a suit by one Simeon Alexander Bayley; on June 6, 1786 Cox was again arrested, this time in a suit by a Thomas Thomas. On October 24, 1786 Cox sued Christopher Duycknlick, who confessed judgement on December 19 of that year. In this suit, Cox was joined as plaintiff by James F. Atlee and Samuel Atlee.⁶² The suit brought by Thomas Thomas was revived in 1787, for on April 3 Cox was again taken by the sheriff to reply.⁶³ The Thomas vs. Cox suit was heard in the Mayor's Court before a jury on

⁵⁸ Breen, *The 'New York' IMMUNIS*, p. 672.

⁵⁹ Breen, *Encyclopedia*, p. 78.

⁶⁰ Trudgen, *James Atlee's Imitation British Halfpence*, seq. p. 968. If the re-dating of the 1787 *Immunis Columbia* issue proposed here is correct, then the *Indian Liber Natus* must be re-dated, also. The same holds true, naturally, for the *George Clinton* and *Non Vi Virtute Vici* issues, as well. The Atlee attribution schemes first published by Crosby and later elaborated by Breen and Trudgen are so interdependent that the collapse of any one part necessarily brings down the entire structure.

⁶¹ See Gary Trudgen's "New York City Mayor's Court and the State Coinages." *The Colonial Newsletter* v. 30, n. 3 (October, 1990), seq. pp. 1192-1202.

⁶² This is the only documentary reference known to date that links Cox and James F. Atlee. Its date is after the June 1, 1786 enabling act that established the New Jersey coinage franchise, before the November 22, 1786 supplemental legislation that authorized Goadsby and Cox to begin coining. On its face, of course, it is very suggestive. It is not, however, sufficient on which to base a role for James Atlee in the New Jersey coinage. The "pool" of skilled, competent, influential, or wealthy persons in the New York City-northern New Jersey area was much smaller than it is today, and so it should not be surprising to find names otherwise unrelated occasionally appearing together. This holds especially in an age noted for its litigiousness, when a gentleman would not be considered such unless he were involved in a suit or two! By the same argument, the Cox-Duycknick, or Cox-Thomas, suits do not, on their faces, imply roles for either of those two parties in the New Jersey coinage. The significance of the Atlee-Cox-Atlee vs. Duycknick suit remains to be seen. The connection among the plaintiffs is not known, the reason for their suit is unestablished.

⁶³ It should be noted that "arrest", or being "taken" by the sheriff, did not mean then what we understand it to mean now. The purpose of an arrest in a civil suit was to ensure the defendant's answer to the suit for which the arrest had been pleaded by the plaintiff. The sheriff was liable for the appearance of the defendant, and had considerable leeway in what means he could take to ensure that the "arrested" person did appear when ordered. The means included arrest of chattels

(continued)

July 24, awarding the plaintiff £36/18/- and 6d costs. Cox did not satisfy the judgement, for the case was re-heard on October 16 and the award was nearly doubled, to £70, with the same 6d costs allowed.⁶⁴

On July 7, 1787, Cox and Samuel Atlee jointly signed a note to Thomas Goadsby in the amount of £1,200.⁶⁵ Cox alone signed a second note to Goadsby for £940 shortly afterwards. These were the two debts that Goadsby sued to recover during the 1787 September Term of the Inferior Court of Common Pleas held in Newark, and that were ordered to referees by Governor William Livingston as Chancellor on June 7, 1788.⁶⁶ Attached to the second note was Cox's pre-signed power of attorney which confessed judgement for the amount. This meant that Goadsby could produce Cox's note before the Essex County sheriff and demand a writ for sequestration of Cox's goods and chattels to the amount of the debt. The writ of execution, a *fieri facias de bonis* (seizure of chattels), was served on November 6, 1787 by Sheriff Caleb Camp.⁶⁷ It should be noted that the writ was not a *capias ad respondendum* (writ of arrest of person), for Cox was already in Camp's custody at this time.

On August 5, 1783, Cox signed a note for £7,000 to one William Cox, who was possibly a London merchant and may have been a relative of Albion's. Albion signed a second note to William, dated September 23, 1783 in the amount of £4,550. Two weeks later, Cox sailed for New York City. William Cox began his action to recover these debts on May 15, 1787 when he sued for and received a writ of *capias ad respondendum* against Cox from the New Jersey Supreme Court. Cox remained free, his liberty confirmed on August 18, 1787, when Matthias Ogden furnished a bail bond to Sheriff Camp. The bond was witnessed by Thomas Goadsby. William Cox's suit was heard during the November Term and judgement without stay of execution was entered against Albion in the amount of £3,500 for the first note, £2,275 for the second. As Goadsby had already seized Albion Cox's chattels under his own writ of November 6, leaving William Cox nothing to attach, and since William Cox's judgement was without stay, Albion's bail was revoked, Matthias Ogden's bailbond was discharged, and Cox was taken to the Common Gaol of Essex County.⁶⁸ Cox later satisfied his namesake's judgement, for no further actions were taken against him by William. If William had been a close

or of the person. The sheriff could also satisfy himself that the defendant would appear in court on the defendant's promise. In other words, "arrest" did not necessarily mean detention of goods or person. We should not assume, therefore, that when Cox was "arrested" he was incarcerated.

64 Declarations, pleas, etc. in the New York City Mayor's Court.

65 No author has suggested a die-sinker's role for Samuel Atlee in the New Jersey coinage, or even a pivotal one, yet his involvement in this suit which brings together two of the three original NJ coinage contract partners appears as suggestive, if not more so, than the earlier Atlee-Cox-Atlee vs. Duycknick suit. It is quite likely that Samuel Atlee was Cox's "backer" in the coinage enterprise at the time he loaned Cox this sum of money.

66 The Chancellor's Rule of Reference was published by Raymond H. Williamson as "Case Record Albion Cox vs. Thomas Goadsby" in *The Colonial Newsletter*, v. 19, n. 3 (December, 1980), seq. pp. 740-746. The referee's report, dated June 3, 1790, awarded Goadsby recovery on his suits against Cox and Atlee. Goadsby's right to action for recovery had been suspended since April 14, 1788, the date on which judgement was entered against Cox by the Inferior Court of Common Pleas.

67 Sheriff Caleb Camp's papers are now in the collection of the New Jersey Historical Society. These include returns of writs, letters from Albion Cox, a list of the chattels seized from Cox on November 6, 1787, among others. The present writer is currently engaged on a study of the history of the New Jersey coinage.

68 The above chronology, which has not been published before, has been developed from the Caleb Camp papers and an unpublished manuscript on the New Jersey copper coinage by Damon G. Douglas preserved at the American Numismatic Society. The present writer is engaged in editing the Douglas manuscript for publication, under the auspices of the ANS.

relative, perhaps the debt was forgiven or resolved in some way that left no further legal record.

Cox was in gaol in December, for on the 3rd (or 31st, the date is illegible) he wrote to Sheriff Camp saying that his wife had visited him the night previous and had delivered a letter from a Mr. Scott to a Mr. [Elias?] Boudinot which desired "...that I should be Liberated-as I already know his sentiments I can have little doubt of effecting my enlargement provided you will permit me to go with Mr. Gifford To Eliz town. Yr present friendly Indulgence towards me gives me hopes you will not deny this favor...".⁶⁹ Sometime after this, towards the end of January 1788, Cox was released from the Common Gaol. On January 19 Governor Livingston, acting as Chancellor, issued a stay of execution against Goadsby's writ to seize Cox's chattels. Ten days later, on January 29, Cox sued for and received a writ of replevin from Goadsby for the Rahway mint's rollers, planchet cutters (2), and coining press, together with ingot moulds for casting copper, six hundredweight of cut blanks, and sixty copper ingots. Cox's surety for the prosecution of the suit allowed by the writ of replevin was Matthias Ogden.

Cox was not free from other legal entanglements, however. On January 14, 1788 the blacksmith William Dudley, who then lived in Morris County but had earlier resided in Elizabethtown, won a judgement against Cox and Thomas Goadsby for £35/5/-, with 6d costs, on a suit for £60 for work he claimed he had done for them one year earlier. The next day, Dudley obtained a writ of *capias ad respondendum* against Cox and Thomas Goadsby, to enforce collection. Sheriff Camp returned *cepi corpus* (literally, "I took [his] body", meaning he had made an arrest of the person) for Cox, but *non est* for Goadsby (i.e., Goadsby could not be found within Camp's bailiwick of Essex County). Cox may already have been in Sheriff Camp's custody at this time. Although Goadsby could not be found in January, by June Camp returned *cepi corpus* for him, also.⁷⁰

There is no record whatsoever of Cox having been "...forced into debtor's prison June 1...", or of "...having spent time in debtor's prison during mid-1787...".⁷¹ The case records show clearly that Cox was not jailed until after November 6, 1787 at the earliest, and that he only served a little more than two months in prison. Up until August 18 of that year his relations with Thomas Goadsby must have been cordial enough to cause Goadsby to witness the bailbond Matthias Ogden posted for Cox in the Cox vs. Cox suit. One month earlier Goadsby had even loaned Cox personally a large sum of money, and an even larger sum to Cox and Samuel Atlee. Given these facts, there is no reason based on the record to support a June 1 closing date for the Rahway mint. In fact, it appears certain that the Rahway operation continued uninterrupted until sometime after November, 1787, since Goadsby's seizure of the mint was probably justified by the writ of *fieri facias de bonis* Goadsby had sued on November 6. The writ of replevin Cox obtained states that "...Goadsby hath taken and unjustly detains..." the

⁶⁹ This letter, which has not been published before, is preserved among the Camp Family archives in the New Jersey Historical Society. If the Mr. Boudinot was indeed Elias, Cox's early connection with him might explain why Cox in particular was sought out in England four years later for the post of Chief Coiner to the U.S. Mint.

⁷⁰ The record of this suit, and the writs arising from it, are in the Essex (NJ) County Clerk's vault under "Writs". William Dudley and his wife Elizabeth sold their Rahway farm to Henry Marsh, Jr. of Elizabethtown on December 22, 1794. Whether William was related to Benjamin Dudley is presently unknown.

⁷¹ Breen, *The 'New York' IMMUNIS*, p. 672; William T. Anton, Jr. "A Modern Survey of the Copper Coinage of the State of New Jersey". *The Colonial Newsletter*, v. 14, n. 2 (July, 1975), seq. p. 493.

mint equipment, but this is dated January 29, 1788. It is, therefore, entirely possible that coining was continuing at Rahway in December, and even into the first days of January.⁷²

If James F. Atlee did indeed work at the Rahway mint as an engraver, his term of employment was not ended by the closure of the Rahway operation on June 1, 1787 since the mint did not close then. Just as the presumed start date for Atlee's employment at Rahway is unhinged, because the evidence does not support it, so, too, the end date is now unsupported by any evidence from the history of the New Jersey coinage. The only evidence left to uphold James F. Atlee as the early American die sinker par excellence is his name on the two Machin's Mills Indentures, the broken A punch linkage across many different dies, and Crosby's decision that James F. Atlee owned that punch apparently on the basis of a colorful reminiscence of what is probably a mis-remembered episode from the teller's youth.

If there were only one broken A punch, and it was continuously owned by Atlee, then its appearance on the obverse of the *Immunis Columbia* forces an implausible reconstruction of his chronology, and hence, of the die's. Since we know from the die emission sequences that the *Immunis* was coined after certain overstruck New Jersey coppers whose undertypes are dated 1788, it is clear that the *Immunis* dies were not mounted in the press until 1788, or later. For the traditional chronology created for James F. Atlee to hold in the face of this new understanding, it must be assumed that he sank the *Immunis* dies during the first half of 1787 but that they were not used to make coppers until long afterward. If we assume that the overstriking of discredited coppers by New Jersey dies was a practise typical of the period late 1788-first half 1789, then Atlee's *Immunis* dies must have lain on the shelf for nearly two years or more. Yet, this apparent nonchalant attitude towards a valuable set of dies is contradicted by what we know to have been an extremely parsimonious husbanding of die steel at the time. Dies were pressed into service long after they had developed severe injuries, some so disfiguring as to make simple identification of the types on their products difficult.⁷³

Presuming that a single broken A punch existed has forced proponents of James F. Atlee into tortured reconstructions that require elaborate explanations unsupported by any known historical documentation other than the simple punch linkages they are intended to explicate. Historical methodology, on the other hand, favors the simpler explanation over the more complicated, when either can account for the facts observed. In the case of James F. Atlee and the broken A punch, the currently standard explanation is among the most elaborate of any in early American numismatics. A simpler explanation, which accounts for the appearance of the broken A punch across many different dies, is that there was more than one such punch, all made from a single defective incuse matrix or master. The "Atlee Broken A" punch, as has been suggested earlier, may actually be a fiction. The enlarged illustrations of this punch strongly suggest that more than one broken A punch may have been employed on Connecticut, Vermont, and New Jersey coppers. If this suggestion is correct, it would support the contention that a single defective matrix raised them all. Assuming more than one such punch frees the researcher from assuming the existence of one die-cutter, and thus from the historically implausible belief that a single itinerant craftsman was responsible for all dies sunk with that punch.

Punch linkages by themselves cannot be sufficient evidence on which to base an attribution scheme, even when the punch is as singular as the broken A. In the first place, naked eye

72 It is commonly believed that the NJ Heads Left die group, M.49-f, 50-f, and 51-g, should be attributed to Thomas Goadsby January-February, 1788. The foregoing chronology suggests that this may require revision.

73 For example, Maris 82-hh, a very late state of 36-J misattributed by Maris; and Garrett:1430, a very late state of 36-J misattributed as 35-J. Also, 1788 CT 14.1-S (see Taylor:2719).

identification of punches being the same, even if aided by high magnification, is an inadequate methodology. Statements about the identity of punches can only be acceptable when photo-optical or comparator techniques have been employed.⁷⁴ In the second place, the simple fact of proven punch links, as in the undoubted case of the broken A, is insufficient evidence for more than the existence of the links, themselves. If punch links are to signify anything more, they must be supported by other evidence as well, such as stylistic similarities across linked dies, similarities in the type of planchet stock employed, and statistically demonstrable metrological relationships, among others.

We know far less about early American minting operations and practises than we think we do. There is no consensus, for example, on even the exact number and location of mints in business 1785-1790. We do not know the names of all the individuals involved; the sources of their capital; the makers and origins of their coining presses, planchet cutters, strip rollers; the sources of the copper used, whether it was raw, smelted, domestic, imported, or the form in which it first entered the mints (smelted ore, ingots, rolled strip or plate, or even cut blanks); the average daily output of a typical mint of the period; or how the finished product, the thousands of coins struck, was distributed.

One important area of study that is only now being considered is the source(s) of the die steel used, and with it, the source(s) of the case hardened punches and other tools used to cut the finished dies. Joseph Richardson, the Philadelphia silversmith, routinely ordered his own punches and files from various English suppliers.⁷⁵ Punches were auctioned as separate lots in estate sales of deceased silversmiths and were particularly inventoried upon death.⁷⁶ No records of the source(s) of die steel used by early American coiners have been discovered to date, but it is not inconceivable that some of it was imported from English makers. The best steel for punches was made from Swedish iron refined and case-hardened in England, and Huntsman's steel was famous in England by the 1770's. Matthew Boulton, himself, bought finished die blanks from Huntsman's establishment.⁷⁷ Some of the more long-lived dies, NJ 56-n or CT 4-L, for example, may have been made from imported steel. Given the propensity to breakage, often rapid, of most early American coinage dies it is more likely that most were domestic, made of fairly crude blister steel imperfectly hardened after sinking.

An interesting parallel to the origin of common die punches can be found in the history of early American type founding. David Mitchelson of Boston was said to have been the first to cast type in America, the face appearing late 1766 in the printed works of Mein & Fleming, Boston printers. However, the same face is found in a London imprint of 1767 (J. Kirkpatrick's translation of Tissot's *Avis au peuple*). Since it is contrary to the usual flow of commerce at that

74 This paper has focused upon the Broken A punch because of its distinctiveness. Striking pressure, direction of strike (i.e., dies can be in the same, or slightly different, horizontal plane), planchet quality, all can affect the appearance of punches on struck coins. Other punches traditionally ascribed to Atlee are not as distinctive as the Broken A. Photo-optical techniques are the surest methods for identifying punch links, given the diverse factors that can affect their shapes.

75 See Appendix D, "Letter Book of Joseph Richardson", in Martha Gandy Fales' *Joseph Richardson and Family, Philadelphia Silversmiths* (Middletown, Connecticut: Wesleyan University Press, 1974), pp. 232, 234, 239-240, 244, 254-259. One such supplier was Thomas Wagstaffe, a Quaker clockmaker active in London 1756-1793.

76 *Ibid.*, pp. 202-203, the sale of the estate of Philip Hulbeart, Philadelphia goldsmith, ca. 1763. See also the reproduced inventories of the estates of Lancaster, PA silversmiths Abraham LeRoy and John and Peter Getz in the appendix to Vivian S. Gerstell *Silversmiths of Lancaster, Pennsylvania 1730-1850* (Lancaster: Lancaster County Historical Society, 1972).

77 See Jack Chard's illuminating study "Late 18th Century Coinage Dies: The Metallurgical Processes Involved." *The Colonial Newsletter* vol. 30, no. 1 (March, 1990), seq. pp. 1136-1143.

time, it is highly unlikely that the English printer purchased his type from Mein & Fleming and it appears more plausible that both bought their type from a common British source.⁷⁸

In the light of this uncertainty about some of the most basic of our understandings about the makers of early American coppers, it seems even more unsupportable to make attributions to particular individuals and construct chronologies as precise as Breen's and Trudgen's, based solely upon a punch link, a name (without a trade identification) in two indentures, a recollection clearly misremembered many years after the event, and a correlation first made by 1876.

James F. Atlee may well have been a die sinker. He may well have worked at Rahway, Machin's Mills, and elsewhere. He may have been related to Samuel Atlee, strengthening his ties to those two minting operations. However, the evidence that survives today, both numismatic and documentary, does not support the elaborate reconstructions of his activity as a die sinker that have appeared since Crosby first attributed a host of different issues to his hand. A common punch, or punches, is not sufficient to prove a common hand.

The Mystery of the 1787 Immunis Columbia

The older explanations of the origin of the 1787 Immunis Columbia cannot be supported by the facts demonstrated from the die emission sequences. The variety was not struck until long after Matthias Ogden submitted his March 3, 1787 coinage proposal to the Continental Congress. The dies themselves were not mounted in the coining press until sometime in 1788/89. The connection with James F. Atlee was hypothetical in the first place, and now appears implausible. If we are to learn anything about the 1787 Immunis Columbia that will withstand scrutiny, it must be based upon the coins themselves, and not upon untested assumptions.



1787 Immunis Columbia. Large Flan variety.
Overstruck on 1786 New Jersey copper, probably Maris 26-S.
Enlarged 2x.
Photo: Bowers and Ruddy, ex Garrett:605.

⁷⁸ Lawrence C. Wroth, *The Colonial Printer* (Charlottesville, VA: University Press of Virginia, 1964), pp. 313-314, n. 9. Wroth also authored the standard biography of Abel Buell.

The planchet stock used to coin the large and small flan varieties, and the diameters of the blanks cut from it, are the surest evidence available. If the mean weights and diameter ranges of the two varieties are compared to the figures for other, related, state copper emissions, a suggestive pattern emerges that may point to the mint origin of the 1787 *Immunis Columbia*.

The diameter range of the small flan variety, 25.0-27.0 mm, is identical to that observed for 1788 CT 1-I (VT dies 25-U), close to the low side of 1787 CT 1.1-A, and identical to the range seen on VT 1785 RR-1 and 1788 RR-29 and 30. In this regard, it is interesting to remember that one small flan specimen, Groves:338, had been struck on a clipped flan identical in fabric to 1787 CT 1.1-A and the *Non Vi Virtute Vici* coppers. While the fabric of the small flan variety appears similar to that of some New Jersey varieties (43-d, for example), its extremely low diameter range is entirely unlike anything else in the NJ series. The range of the large flan variety, 29.0-31.0 mm, is higher than observed on most state coppers of the Confederation period. It should be remembered, however, that all are known overstruck on a New Jersey copper variety whose own diameter range is 27.5-29.0 mm. Clearly, the second strike spread the flans by 1.0-1.5 mm. The mean weights of the small and large flan varieties are quite close, being 151.4 and 150.4 grains, respectively. The mean weights are very unlike any contemporary state copper issue save the New Jersey series. Of course, the mean weight of the large flan variety is simply the mean of the host coins, but the observation that the mean of twelve examples of NJ 26-S is 145.5 grains shows that heavier than average hosts may have been selected for overstriking by the *Immunis* dies. The respective first standard deviations, +/- 16.3 and 13.2 grains, suggests closer quality control for the large as opposed to the small flan varieties.

Reverse die alignments suggest that the *Immunis Columbia*'s resemble the New Jersey coppers more than Vermonts or Connectic和平。The axis range of both varieties of the *Immunis* is a tight 160-1700, compared to the wider ranges of 150-1950 for CT 1.1-A or 145-1700 for CT 1.1-VV, and is very dissimilar to the 275-3300 range observed for CT 1-I (VT dies 25-U). Vermont die orientations are typically wider, also, ranging from 170-2000 (RR-12, 16) to as much as 30-3000 (RR-29). The *Immunis* range is much more akin to the regularity seen in the New Jersey coinage, where offsets were usually held to as little as 10-150 either side of true coin alignment.

When the differences between horizontal and vertical axis diameters are compared a figure which measures the direction and amount of flan spreading during striking can be derived.⁷⁹ Planchet diameter spreads and their directions are artefacts of the actual manufacturing of varieties, and in the present regard comparison of these factors is illuminating. Most New Jersey coppers, especially those with the broken A on their obverses, show spreading along the horizontal axis, meaning that they are broader across than from top to bottom. The average diameter spread for these NJ varieties is .23 mm horizontal. Connecticut and Vermont varieties struck from dies sunk with the broken A punch show a more random distribution of spreading, but the majority are broader along their vertical than their horizontal axes.

In terms of die alignment and flan spread, the 1787 *Immunis Columbia* issue resembles New Jersey coppers. The large flan variety was struck over NJ hosts, all of which were of a single variety. In terms of average horizontal diameters, the small flan *Immunis* does not resemble

79 The manufacturing processes responsible for such unidirectional spreading are presently not understood. This spreading was not a function of the micro-geography of the die type, however, since observations show that some varieties of the same type uniformly spread horizontally while others spread vertically. The preferential horizontal spread described here, however, whatever its cause, is a further characteristic that distinguishes the 1787 *Immunis Columbia* coppers from the Vermont and Connecticut varieties that share the broken A punch.

any New Jersey variety but its fabric is very similar to some (Maris 43-d, for one). Some of the small flan pieces were clipped by the planchet cutter, like some Connecticut (1787 Miller 1.1-A) and Vermont (1788 Ryder-16) varieties. One small flan specimen, Garrett:604, was struck on a flan whose edge had been ornamented after striking.

Clearly, two different issues are signified by the different flan sizes. All the technical parameters, and the die emission sequences, suggest that the large flan issue was struck in the same minting facility that coined New Jersey coppers. The small flan variety was struck in a mint that more closely controlled the alignment of the obverse and reverse dies than was typical of the Vermont and Connecticut operations. It was also manufactured in such a way as to cause regular horizontal, rather than vertical, flan spreading, again more typical of New Jersey than Connecticuts or Vermonts. It was struck on very dissimilar planchet stock, however, but the average weight of the blanks was clearly intended to meet the New Jersey standard. Since the die emission sequences clearly show that the earliest small flan coins were struck contemporaneously with the latest large flan ones, the same minting facility must have struck both. The most likely candidate mint was, therefore, the New Jersey operation of Matthias Ogden at Rahway.

CONCLUSION

The 1787 *Immunis Columbia* issue was struck, therefore, circa late 1788-middle 1789 under the auspices of Matthias Ogden in the original Rahway mint, where NJ 16-S and 26-S had been made. Since Albion Cox did not leave for England until after September 1, 1790, and since Thomas Goadsby was still associated with Ogden in coining coppers in March, 1789, it is entirely possible that the original Rahway partners were involved, with Ogden, in the coinage of the 1787 *Immunis Columbia* issue.⁸⁰ It is probable that the entire issue was planned for circulation, including the large flan variety. The first pieces coined were struck over New Jersey hosts possibly because of a shortage of planchet stock.⁸¹ When fresh stock was

⁸⁰ In April, 1793 Thomas Goadsby sued Essex County High Sheriff William Halstead; Aaron Ogden, Matthias's brother, was Goadsby's attorney. Halstead had become sheriff in October, 1788, succeeding Caleb Camp in that office. The declaration that began Goadsby's suit claimed that Albion Cox had been in Camp's custody, that Halstead had assumed custody when he became sheriff, but that "without the license and against the will of the said Thomas [Goadsby], willfully and voluntarily suffered and permitted the said Albion to escape and go at large out of his Custody wheresoever he would...to wit on the first day of September [1790].

On March 29, 1789 Matthias Ogden wrote from Elizabethtown to the Philadelphia firm of Messrs. Fishers & Co.. The letter, carried by an unnamed bearer, requested six weeks credit for a purchase of copper, payable later in New York bank notes. To support his request for credit Ogden wrote "...Mr. Goadsby is away, but I expect is on his return- were he here I judge he would request your credit for six weeks...as formerly...if the copper can be had & Mr. Goadsby does not return or should disapprove, I will give you any name here with mine for the amount..."

These two documents establish the facts that Cox was still in Essex County, New Jersey until September, 1790; and that Ogden and Goadsby were still purchasing copper in March, 1789. Whether Cox was associated with Ogden and Goadsby in 1789 is uncertain. That the copper Ogden sought to purchase was intended for coinage blanks is more than probable.

⁸¹ New Jersey coppers seem to have had a fairly circumscribed circulation pattern, which may have included only the cities and towns of the state's northern seaboard and New York City, and then almost haphazardly. The famous Stepney Hoard, for example, contained Connecticut and Vermont coppers, but no New Jersey coins. In Morristown itself, seat of Walter Mould's activity, few locally struck New Jersey coppers appear to have entered circulation. Silvanus Seely, a

(continued)

obtained, it consisted of finished blanks that had been made on a planchet cutter whose cross section cut smaller blanks than were customary at Rahway. Some of those blanks had been clipped by the planchet cutter like contemporary, back-dated Connecticut, Vermont, and Non Vi Virtute Vici stock, but their source is unknown. These blanks were used to coin the small flan variety. No small flan specimen is known struck over a host coin.⁸² It is not known with any degree of certainty who cut the dies for the Immunis Columbia, only that the obverse type resembled the 1785 Immune and 1786 Immunis and the reverse type was similar to the 1786 Immunis. The obverse of the 1787 issue superficially appears to be punch linked to the obverses of a host of other New Jersey, Connecticut, Vermont, and speculative issues (Non Vi Virtute Vici, 1787 Immunis, 1787 Indian/Excelsiors, 1787(?) GEORGIVS III/Indian), but the significance of the linkage, if any, is factually unknown.⁸³ The 1787

Revolutionary War hero and local Morristown farmer, kept a careful diary from May 12, 1768 through July 9, 1797 (the diary is conserved at the Morristown National Historical Park). Seely recorded all his daily purchases, costs of trips to towns in northeastern New Jersey, and visits to taverns. He noted his expenses in New Jersey or New York proclamation money or English shillings, but recorded seeing or using no New Jersey coppers. The diarist William Bentley, pastor of East Church in Salem, Massachusetts, recorded and described the copper coins he encountered in trade in his diary for September 2-October 27, 1787 (*The Diary of William Bentley*, D.D. Salem: The Essex Institute, 1905, pp. 73-74). He noted the types and inscriptions of a 1787 bust left Connecticut and a 1787 Nova Eborac, both of which he had at hand while writing. His memory supplied the description of the types of a Vermont landscape copper, but failed him as to inscriptions or date. Swedish and Russian copper coins were similarly described from specimens Bentley had, but no New Jersey coppers. A search through relevant issues of *The New Jersey Journal*, published in Elizabethtown during the period of the Rahway-Elizabethtown coinage, revealed no references to locally-struck coppers save an announcement of the act authorizing it in November, 1786.

82 This fact is not presumptive of a pre-1788/89 date. The observation that the weights of the Immunis and related issues briefly mentioned in this paper (George Clinton, Liber Natus, Non Vi) were "good" is not necessarily contradicted by the late dates herein proposed for them. Not all coppers struck 1788-1789 were lightweight, particularly New Jersey's. The die emission sequences established for the NJ reverse f and g families (see above, note 40) showed that there was a return to full, statutory, weight late in their lives, and this was taken as coincident upon Matthias Ogden's award of custody of the New Jersey coinage contract (Goadsby-Cox portion) effective June, 1788.

The Immunis was not a clandestine issue. Rather, it supplemented Ogden's revenue from the regular coinage of New Jersey coppers as it was free from the 10% seigniorage payable to the state on NJ strikes.

83 There has been a tendency among students of early American coppers to accept at face value the dates appearing on coins of the Confederation period. This study, and others, have shown that such things are not always as they seem. If the 1787 Immunis Columbias were backdated, then the dates of the Excelsiors and Non Vi's also require re-examination since they share the broken A punch. Breen and Trudgen both dated the Non Vi Virtute Vici issue to early 1786. Trudgen relied upon Breen, Breen relied upon a notice in the *Essex Journal and Merrimack Packet* (*The Massachusetts and New Hampshire Advertiser*) of March 29, 1786. This notice did not refer specifically to the Non Vi types, only to numbers of coppers then in circulation which the reporter felt were "...In general well made, and of good copper, those of New York in particular." Breen determined that the "New York" coppers referred to was the Non Vi issue, saying "No other coppers dated 1786 or earlier referred in device or inscriptions to New York." Breen, *Encyclopedia*, p. 91. This was an argument *ex silentio* which accepted the coin's dates as the actual years of striking. Crosby was far less certain regarding the newspaper account: "What the New York coins were, to which the writer of the above mentioned paragraph refers, we are at a loss to determine, unless to the NON [VI] VIRTUTE VICI, (1786), which may have made their appearance early in that year, and bearing the legend, NEO-EBORACENSIS, were taken to be the coins authorized by the State, and thus considered as sufficient to warrant that statement." *Early Coins of America*, p. 290. David Bowers noted that, given the current rarity of the Non Vi issue today, it is quite likely that few ever

(continued)

Immunis Columbia coppers were not struck to support Matthias Ogden's March 3, 1787 coinage proposal. They may have been struck to provide Ogden with another source of revenue, since his trusteeship of the New Jersey contract must have been both onerous and costly, but this is unproved. That they adhere to the statutory New Jersey weight standard of 150 grains further suggests that Matthias Ogden was their author; Ogden appears to have been an upright individual who honored his commitments. They do not appear to have been a surreptitious issue.⁸⁴ Nothing in the New Jersey coinage contract prohibited the coiners from minting other types. An aura of mystery proper to the scant documentation that survives still surrounds the 1787 Immunis Columbia coppers.



circulated in late Confederation times. Bowers suggests that another possible candidate for the coinage referred to in the *Essex Journal* is the *Constellatio Nova* issue, whose inscription *LIBERTAS ET JUSTITIA* is personified on the arms of New York State. As Reverend Edmund Slafter, author of *The Vermont Coinage* (1870) wrote: "It is marvellous with what facility the 'surmise' of one writer becomes the 'impression' of the next, and the 'distinct opinion' of the third, and so on, *crescens eundo*, until it comes to be announced, without any foundation whatever, as the genuine fact of history."

⁸⁴ The impending ratification of the United States Constitution (June 21, 1788 by the ninth state, New Hampshire) does not appear to have sent ripples of alarm through the ranks of clandestine, or legal, coiners. Those operations of the former nature (Machin's Mills and the host of smaller, undocumented "mints") were not in jeopardy since there were no enforcement sanctions for a breach of Article I, Section 10, and there was a ready market in the summer of 1788 for their wares. State operated mints would legally be required to close following ratification, of course, but modern numismatic experience suggests they did not. The New Jersey Court of Chancery's rule of reference that awarded Ogden custody of the coinage operation was dated June 7, 1788, at a time when eight states had ratified the Constitution and debate by the ninth was expected to commence in 11 days. Yet, it specified that Ogden was to "perfect the contract", meaning complete the coinage of the full 2,000,000 coppers originally called for in the Goadsby-Cox supplemental act of November 22, 1786. We have already seen that Ogden was still coining coppers in March, 1789, and the assumption has been made that these bore the New Jersey devices. Not until May 8, 1792 were all state issues legally demonetized, yet despite this the New Jersey Assembly authorized the release of their coppers stock from the treasury into local circulation in November of that year. Clearly, economic necessity and uncertainty about the exact meaning of Article I, Section 10's provision that "No State shall...coin money..." was stronger than the written word. After all, copper had never been made legal tender by Great Britain or any of the new American states. Connecticut specifically excluded their own coppers from legal tender status and New Jersey's coppers only retained their value during the Coppers Panic of 1789 because of their redemption value, not their legal tender value. Federal copper coins, half and large cents, did not become legal tender until long afterwards (April 22, 1864 and PL89-81 of 1965).

UPDATE CNL Fugio Weight Survey

In CNL No. 80, pages 1053-1068, we presented a preliminary report on the results of the CNL Fugio Weight Survey. Now, some two years later, we present an updated report to our Patrons and a summery of the revised statistical data that are the result of this continuing investigation. The updated Summary Worksheets appear on pages 1239 and 1240.

There are now 667 Fine Ray Fugio Cents of 1787 included in our database, 87 Club Ray varieties, and 42 New Haven specimens. This is an approximate 12% increase in each category. Our plan is to continue indefinitely to add to the basic database and Patrons who may not have submitted their data are encouraged to do so by supplying data on the Survey Sheet which was provided on page 1067. Our sincere thanks to Patrons who have contributed data on the Fugios and on the Virginia Halfpence as well. This present report will cover only the Fugio Cents. The Virginia Halfpence of 1773 will be the subject at some later time; evidently, so few Virginia Halfpence are attributed by die variety that there is considerable difficulty in reporting quantitative data. This problem will hopefully be ameliorated by an upcoming revision by Eric P. Newman to his original work on the Virginia Halfpence.

A major change has been incorporated in the histograms plotted from our data. The increments have been increased from one grain to five grains on the horizontal axis of the plots. We have learned that this choice provides much improved smoothing of the shapes of the data distribution, as discussed in Appendix B -- page 1065 -- of the preliminary report, and is now established as a CNL standard for histograms of the Early American coinages. This change has the additional advantage of ease for reading the horizontal scale from the charts as each major subdivision on the horizontal axis equals five grains. The vertical axis will vary from time to time to better indicate the shape of the distribution curve, in a relative sense, of different groups. These changes do not affect the relative value of each mark in the plot as each still indicates the actual weight of a single specimen within the selected scale, i.e. -- one mark, regardless of its width or height, represents a single coin the weight of which lies within the five grain interval of the horizontal scale.

The Summary Worksheet has been revised in order to "clean up" the chart and to increase the readability by eliminating extraneous symbols. Each die variety combination has been updated to reflect the new information received from our Patrons. The rarity tabulations have also been revised to reflect current "1991" estimates of relative rarity in accordance with the Sheldon scale; as always -- remember that these are ONLY estimates. One die variety combination, 102-GG, has been moved to the Fine Ray category from its previously incorrect position in the New Haven category, and Note G has been added to emphasize the change; this error resulted from the computer sorting the varieties by number and ye Editor failing to catch the error in time to correct the original chart prior to publication.

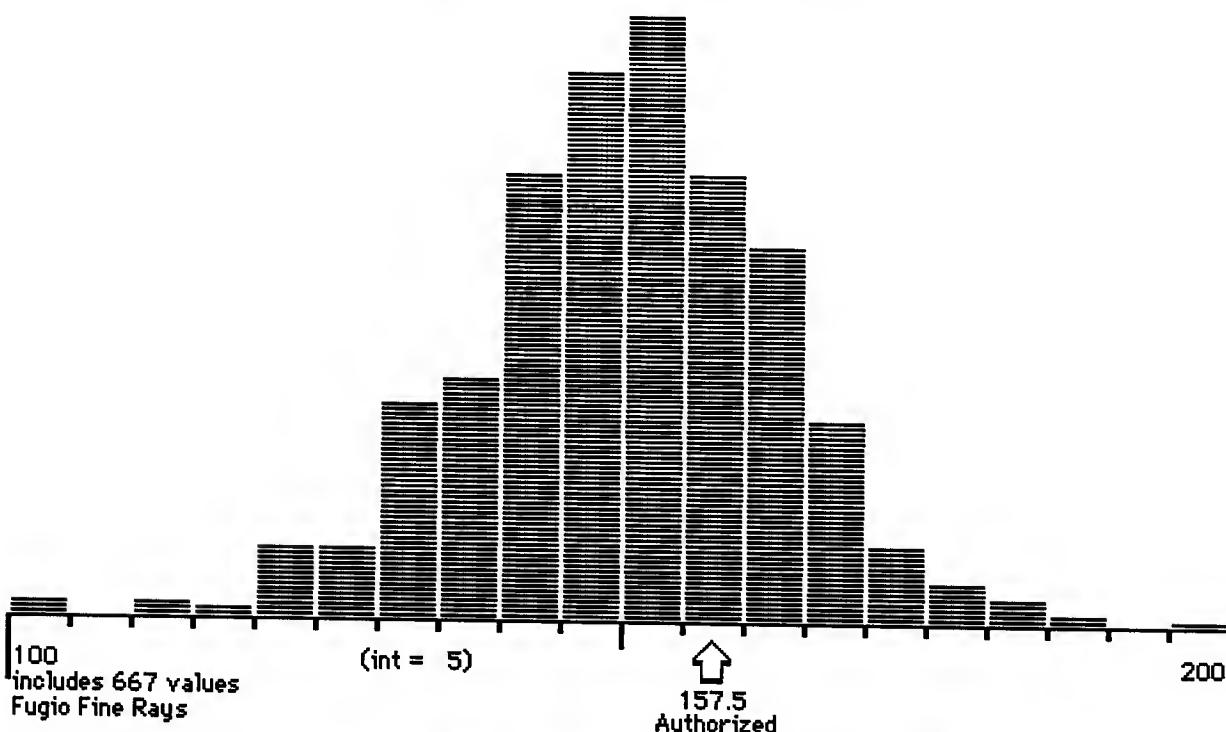
Four histograms are plotted in this update. The first is the plot for the 667 Fine Ray specimens now recorded in the database. Next is the histogram for Fugio 15-Y which shows very obvious signs of a double or triple peaked curve indicating two or three substantive differences in the origins of the several subgroups comprising the overall group -- differences which must await future analysis for explanation. Finally -- simply as a matter of interest -- the histograms of the Round End Club Ray Fugios versus the Concave End Club Ray Fugios are plotted to illustrate the weight differences between these two Club Ray categories, again suggesting differences in manufacture that must await future analysis for explanation.

Finally -- a request to our Patrons for future data. There are, in particular, several points that need to be emphasized for extra care in reporting. First, note that we have no weight data at all for combinations 1-B (0°), 1-Z (0°), 14-H, 14-X, and the 102-GG in copper and the 104-FF in gold. Next, particular attention is necessary for the combinations which have upset reverses, primarily at zero degrees as indicated by the (0°) symbol. Some have both configurations but most collectors are not paying attention to these differences and we receive inputs which do not designate the orientation for the specimen being reported. Additionally, some specimens are believed to exist ONLY with the upset reverse configuration -- 15-K (0°), 19-M (0°) and 22-M (0°), for example -- indicated by Note D in the chart. Someday, hopefully, we will be able to sort out all of the presently existing discrepancies associated with reverse orientations. Please pay particular attention to ALL obverse/reverse die orientations. Today, we believe that with the single exception of variety 22-M. all variations are either the normal 180° or upset 0° configuration within approximately +/- 5°. The spread on variety 22-M appears to be +/- 30° and in itself represents some unusual but still unknown factor in the manufacture of this variety. Please advise ye Editor of any exceptions that may be observed or previously unreported combinations having upset (0°) die juxtapositions.

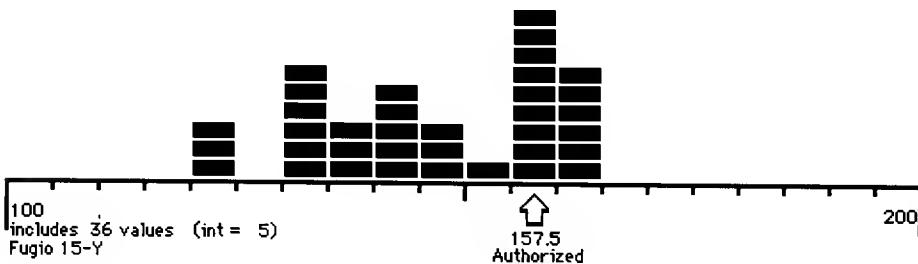
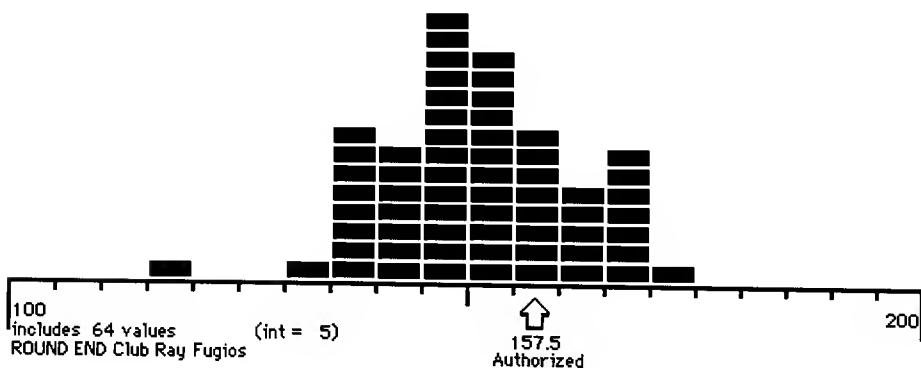
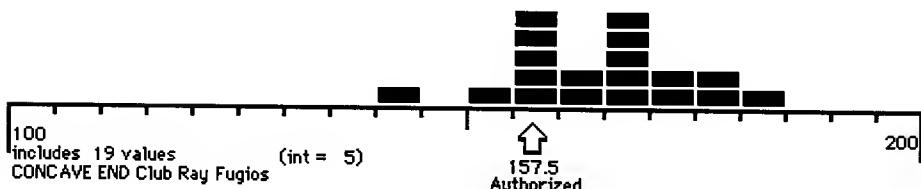
Again -- thank you for your cooperation and participation in the survey.

JCS

**FUGIO CENTS of 1787
Fine Rays Histogram**



Statistics
Number of specimens = 667
Authorized weight = 157.5 grains
Average weight = 150.0 grains
Standard deviation = 12.7

Fugio 15-Y Histogram**Round End Club Rays Histogram****Concave End Club Rays Histogram**

Appendix A -- Summary Worksheet Update

January 1991

FUGIO CENTS OF 1787 - SUMMARY WORKSHEET								1991	
VARIETY	COUNT	AVERAGE	HI	LOW	STD.DEV.	VARIANCE	RARITY	NOTES	
Fine Raye	887	150.0	197.4	101.0	12.7	181.8			A
1-B	23	141.7	162.2	112.6	10.6	113.3	R5		
1-B (0°)	0						R8		B
1-L	10	148.7	164.0	130.8	13.2	174.4	R6		
1-Z	4	152.5	164.0	144.7	8.2	66.6	R7		
1-Z (0°)	0						R8		C
1-CC	3	145.4	147.0	144.0	1.5	2.3	R7		
6-W	19	150.8	174.8	135.9	12.4	153.1	R4		
7-T	26	151.5	186.1	120.0	16.5	272.5	R2		
8-B	34	148.2	175.0	111.0	15.1	227.9	R1		
8-X	26	148.6	185.4	103.0	14.9	222.8	R2		
9-P	21	150.1	162.0	138.8	5.9	34.9	R3		
9-Q	5	147.7	154.7	134.3	8.4	69.8	R5		
9-S	6	153.0	163.1	134.7	9.7	94.9	R7		
9-T	6	156.2	179.0	140.0	13.8	191.0	R6		
10-G	7	155.3	170.4	148.3	8.0	63.5	R7		
10-T	15	154.3	165.9	146.0	5.8	34.2	R6		
10-OO	1	181.6	181.8	181.6			R8		
11-A	8	147.7	162.9	130.6	11.2	124.4	R6		
11-B	11	157.2	171.6	126.5	15.8	250.5	R4		
11-X	14	152.0	182.6	122.0	18.1	327.4	R4		
12-M	19	153.5	175.2	140.1	10.7	115.3	R4		
12-S	14	149.9	170.8	134.5	11.7	137.2	R5		
12-U	15	153.9	171.4	138.0	13.0	116.0	R7		
12-X	24	154.4	175.4	121.9	13.0	155.4	R1		
12-Z	0	155.0	175.4	132.5	13.0	164.7	R7		
12-Z (0°)	2	142.8	149.7	135.8	9.8	96.6	R5		
12-KK	0	157.5	166.0	153.0	3.0	9.0	R6		
12-LL	0	153.8	159.3	147.4	8.0	36.2	R7		F
13-N	15	143.0	166.0	131.0	9.8	90.4	R5		
13-R	15	142.8	166.0	121.7	12.8	164.9	R5		
13-X	44	153.8	197.4	114.3	16.1	258.1	R5		
13-KK	0	152.0	166.0	138.1	10.8	116.0	R7		
14-H	0								R5
14-O	13	152.2	164.0	143.2	6.1	37.2	R7		
14-X	0								R8
15-H	11	142.8	166.0	138.0	6.7	44.2	R5		
15-K (0°)	0	149.2	157.4	134.3	11.1	122.2	R7		D
15-V	0	140.3	166.0	123.0	15.2	232.1	R6		
15-Y	36	149.2	166.0	121.9	13.0	169.1	R8		
15-H	0	142.4	162.5	131.0	13.0	338.4	R5		
16-N	15	154.2	168.2	139.2	7.5	56.3	R5		
17-I	1	144.8	144.8	144.8					R8
17-S	17	144.7	168.0	124.7	10.9	118.1	R4		
17-S (Dbl/Wt)	1	333.0	333.0	333.0					R8
17-WW	3	149.2	152.0	144.8	3.9	15.0	R7		A

Appendix A -- Continued

VARIETY	COUNT	AVERAGE	H1	LOW	STD.DEV.	VARIANCE	1991	NOTES
18-H	15	147.8	173.0	134.0	11.0	388.0	R6	
18-U	27	154.0	166.7	142.0	7.5	56.9	R4	
18-X	6	151.8	168.0	126.9	14.9	223.3	R7	
19-M (0°)	7	149.4	167.5	134.0	11.1	122.4	R7	
19-Z (0°)	19	144.3	170.3	122.0	13.3	176.2	R6	
19-SS	1	135.0	135.0	135.0			R6	
19-SS	13	149.1	163.1	127.6	12.6	157.6	R7	D?
19-SS (0°)	2	161.7	162.2	181.1	0.8	0.6	R8	D?
20-R	9	149.5	157.7	131.0	9.0	80.3	R6	
20-X	9	139.8	163.1	104.9	18.9	358.9	R6	
21-I	20	148.9	168.9	126.0	10.4	107.6	R5	
22-M (0°)	10	152.4	175.0	129.6	14.8	219.4	R6	D & E
102-GG (Gol)	1	231.4	231.4	231.4			R8	G
102-GG (Cop)	0						R8	G
Club Rays	87	152.7	180.3	118.0	11.5	131.7		
2-C	10	164.2	180.3	140.8	12.8	163.0	R7	
3-D	37	150.8	169.0	118.0	10.5	109.3	R3	
4-E	27	150.6	170.0	135.8	10.6	111.3	R3	
5-F	4	166.3	170.0	164.0	2.6	6.9	R7	
5-IH	3	163.8	168.0	157.4	5.6	31.7	R7	
23-ZZ	1	159.0	159.0	159.0			R8	
24-MM	1	158.0	158.0	158.0			R8	
New Havens	42	153.5	231.4	125.3	21.3	452.3		
101-AA (Cop)	2	157.7	173.5	141.8	22.4	502.4	R8	
101-BB (SII)	1	152.8	152.8	152.8			R8	
101-EE (Cop)	1	140.9	140.9	140.9			R8	
101-EE (SII)	1	151.9	151.9	151.9			R8	
103-EE (SII)	1	151.8	151.8	151.8			R8	
103-EE (Bra)	1	125.3	125.3	125.3			R7	
104-FF (Gol)	0						R8	
104-FF (SII)	9	177.8	180.0	174.0	2.0	4.1	R6	
104-FF (Bra)	7	143.9	163.0	139.0	8.5	73.0	R4	
104-FF (Cop)	19	142.7	196.3	135.6	13.3	176.1	R1	
104-FF(Cop)(0°)	1	160.7	160.7	160.7			R8	
105-JJ (SII)	2	161.6	162.2	161.0	0.8	0.7	R8	
Obv. 106	0							
Obv. 107	0							
Rev. UU	0							
NOTES								
A		Norweb Sale double thickness (333.0 grain) 17-S is omitted from this category. (Norweb:3549)						
A		Upset reverse (0°) for variety 1-B was reported on 7-14-76; weight unavailable.						
C		Upset reverse (0°) for variety 1-Z was reported on 9-26-83; weight unavailable.						
D		All known specimens have upset reverses. (0°)						
E		Upset reverses of variety 22-M have the widest range of variation of 0° +/- 30°						
F		Variety 12-LL includes specimens reported as (Kessler) 12-N.2						
G		102-GG is included with the Fine Ray varieties to assure that it is NOT mistaken for a "New Haven".						

